



Phantom 2048

Lighting Console

User's Manual

Ver. 2.028

CODE ELECTRONIC CO., LTD.

<http://www.codelight.com>

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1. Welcome to Use the Phantom 2048

The Phantom 2048 is a special console for intelligent lights and dimmer packs.

For your convenient usage, the manual is divided into 10 chapters. Important contents are highlighted by shading and example explanations are added when necessary for the sake of your better understanding.

In the manual, a square symbolizes a button, e.g. **Enter**, while a square brackets symbolizes a menu item (corresponding 6 buttons on the right of LCD Screen) shown on the LCD Screen, e.g. **[FileSystem]**.

1.1. Setting up Phantom 2048

You need to prepare the following connection before using Phantom 2048:

- Connect Phantom 2048 with AC power supply;

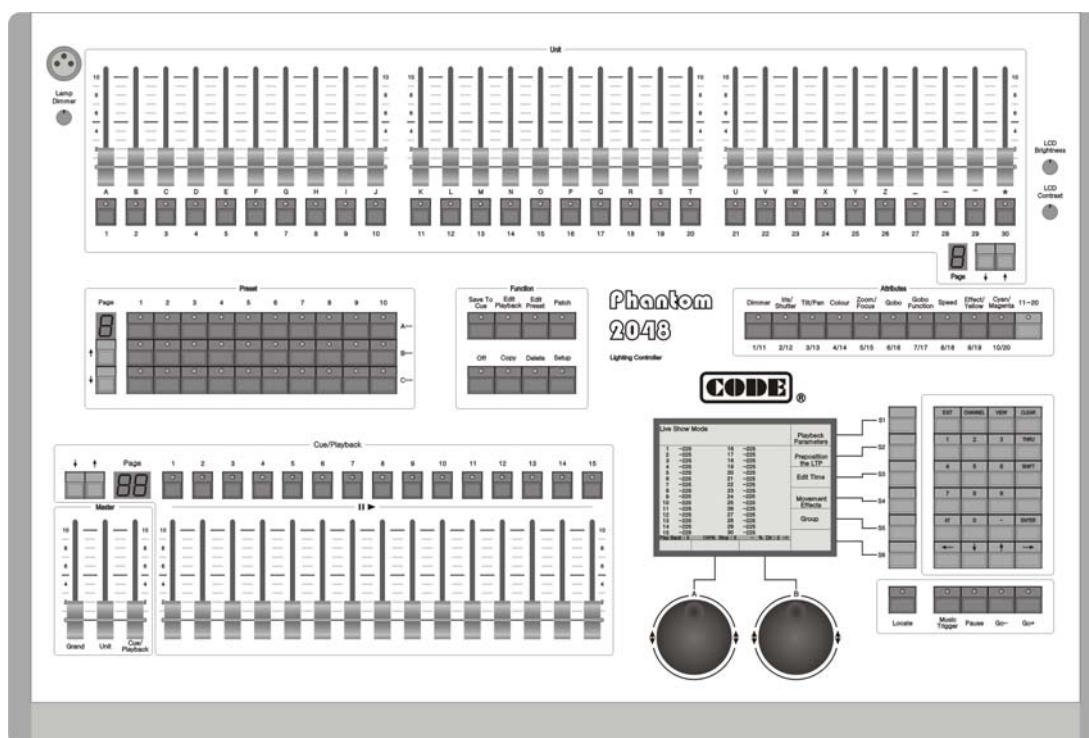
Note: Check whether the local power supply is within the range of 100V-240V.

- Connect the fixtures with DMX cables.

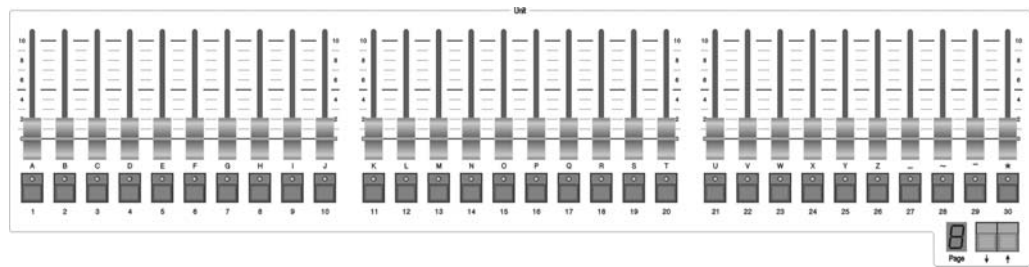
There are 4 optically isolate DMX output jacks in Phantom 2048, thus A, B, C, D ports.

DMX512 protocol regulates that there are 512 channels. That means actually, Phantom 2048 use four output ports with 512 channels each.

1.2. The Front Panel of Phantom 2048



1.2.1. Unit



Unit section comprises of Unit page, Unit faders and Unit buttons.

One unit can be patched to a fixture, or a channel which can compose of one or more dimmers.

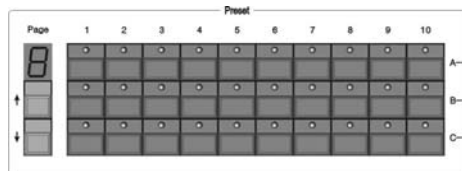
Unit page: Phantom 1024 has 8 Unit pages, each of which can be patched to 30 Units. Thus, 8 pages can totally control 240 Units. Pressing or can change the page, led number display the present Unit page.

Each fader can control the light level of a fixture or a channel. Fade in or out will change the brightness of the fixture or channel that had been patched.

The buttons under the Unit faders are the selecting button for the Units. Two functions of them are:

1. Select the Units;
2. Fast enter English letters and symbols.

1.2.2. Preset





Preset section comprises of Preset pages and Preset buttons.

Phantom 2048 has 7 Preset pages, each of which has 30 Preset buttons. Therefore, there are totally 210 Preset buttons. Pressing or can change the page, led number display the present Unit page.

There are 30 Preset buttons on the Front panel, divided into 3 rows, distinguished each other by A, B and C. After finishing the Unit patching, the 30 Preset buttons of the 1st preset page are patched to the value of attributes of the Units. For instance, the 1st row A is controlling the colours, the 2nd row B is controlling the gobos and the 3rd row C is controlling the locations. The 10 buttons in each row are preset as different attribute values. For example, if you press A1, all the patched fixtures will show white light beam. You can set up the Preset buttons of other pages.

1.2.3. Playback

Cue/Playback section contains Playback pages, Playback faders and Playback buttons.

Phantom 2048 contain 60 Playback pages, each of which contains 15 playback faders. So, it can memorize 900 Effects. Pressing  or  can change the page, led number display the present Unit page.

All the preset Cue and Chase need to be saved in the Playback. You can use faders to playback the programmed Effects.

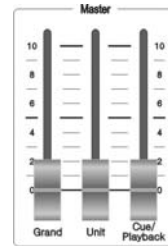
There are 15 playback buttons which above Playback faders, has three functions:

1. The Flash function of Playback. When you don't fade in the Playback faders, you can press and hold still the button to run the program, which as the same as you fade in the Playback fader. The program will be turned off as soon as you release the button.
2. The manual function of Playback. After fade in the fader, the button is used for manual operation, to run one-step of the playback. (Notice: you must set the steps of the playback to Link Off, or set the link mode of playback to manual when it is running).
3. Press **Shift** + Playback buttons to switch the present effective Playback. (You can use the control wheels to change the speed of the present Playback program.)

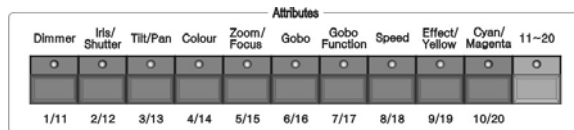
1.2.4. Master

There are 3 faders in the Master section.

- Grand** – controlling the general output level;
- Unit** – generally controlling the faders in the Unit section;
- Playback** – generally controlling the Playback..



1.2.5. Attributes



In the Attributes section, there are 10 Attribute buttons and one **11-20** switch button. Usually, the ten attribute buttons stand for the 10 attributes printed on the board; after press the switch button, they symbolize another 10 attributes, that's the 11-20 attributes. After you select the units, using these attribute buttons with control wheels, you can set up the assigned attributes of the Units.

According to the differences between various fixtures, the LCD screen will display the name of the attribute after you press the Attribute buttons. Each Attribute button can carry 2 attributes, and the LCD screen also shows you which attribute will be controlled by wheel A or B.

1.2.6. Function

There are 8 buttons in the Function section:

Save to Cue --- save the Playback program of Cue;

Edit Playback --- establish and setup Playback;

Edit Preset --- edit the Preset;

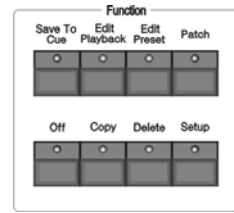
Patch --- patch the Units;

Off --- close some Units;

Copy --- copy function;

Delete --- delete function;

Setup --- setup the Console.

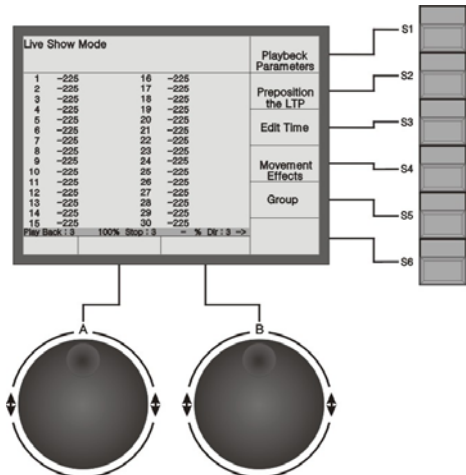


1.2.7. LCD Screen

Display diversified information under various circumstances.

1.2.8. Control wheels

The wheel A and B are used to setup all the attributes values of the Units, as well as all the controlling parameters of the Effects.

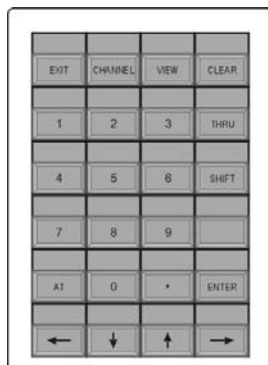


1.2.9. Menu Soft-keys

On the right of the LCD screen, there are 6 Soft-keys, the functions of which depend on the present state of the console. Under different situations, the enabled functions of the keys are displayed on the corresponding place of the LCD screen. For convenient, keys from the top down we use **S1** – **S6** instead.

1.2.10. Numeric keypad

There are 24 buttons in the Numeric keypad. Their functions will be illustrated in the following chapter.



1.2.11. Action keys

There are 5 buttons with led in the Action section:

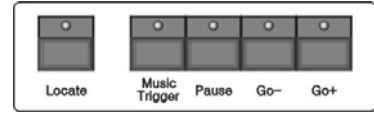
Locate --- if you press this button, the selected fixtures will display white light beam. The positions of Pan/Tilt are preset in the middle, so you can easily find out the fixtures and locate them according to your need.

Music Trigger --- music trigger of Chase.

Pause --- Chase pause.

Go + --- Chase in order.

Go - --- Chase in reverse order.

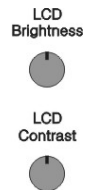


1.2.12. Other Devices

On the upper-left corner of the front panel, there is a jack for a 12V gooseneck working light, under which is the dimmer of it.



on the upper-right corner, there are 2 knobs. The upper one is to adjust the brightness of the LCD screen, while the lower one is to adjust the contrast of the LCD screen.



1.3. The Rear Panel of Phantom 2048



1.3.1. DMX Output

There are 4 optically isolate DMX output jacks in Phantom 2048, thus A, B, C, D ports.

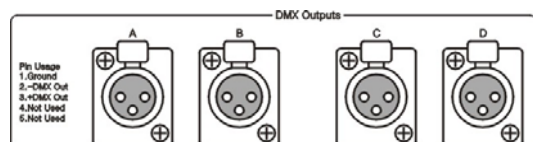
DMX512 protocol regulates that there are 512 channels. That means actually, Phantom 2048 use four output ports with 512 channels each.

“DMX Output A” exports the signals of 1 - 512 channels (A port);

“DMX Output B” exports the signals of 1 - 512 channels (B port);

“DMX Output C” exports the signals of 1 - 512 channels (C port);

“DMX Output D” exports the signals of 1 - 512 channels (D port).



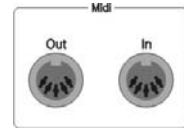
1.3.2. Audio Signal Input

Phantom 2048 can pick up the bass and rhythm of the audio signal to trigger Chase, so that Chase can automatically follow the bass rhythm of the audio. There are two ways to input the audio signals: one is through a 1/4 inch stereo plug; the other is by the microphone of the console. After the stereo jack is plugged, the console will use the audio signals from the stereo cable, otherwise, it will use the microphone to pick up the sound.



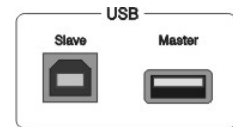
1.3.3. MIDI Output and Input

Console not only can be controlled by the MIDI signals, but also can send out MIDI signals to control another Phantom 2048. Please refer to the relevant chapter for further information about the controlling orders.



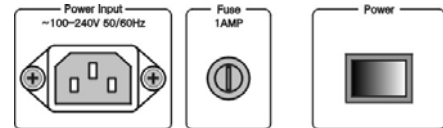
1.3.4. USB jack

You can use USB to backup the console data, update the light library, as well as update the interior programs.



1.3.5. Electrical Outlet and Power Switch

Phantom 2048 can adjust itself to a very wide voltage range (100-240VAC, 50-60Hz). Thus, it can be used worldwide. If you need to change the fuse, please pull out the power supply cable to insure a save operation.



1.4. Clear All Data

Note: All the data in the console, including all the fixture patch, preset and playback, will be cleared, except the uploaded fixture library.

You'd better clear all data in the newly-bought console, so that you can avoid the unpredictable errors, caused by disorder of the mixed patch.

- Press **S4** in Function section to enter the "User Supervise Menu";
- Press **S4** [System Parameters] to enter "System Setup" menu;
- Press **S4** [Internal data Clear];
- Press **S5** [Clear All Data];
- Press **S1** [Confirm] to clear, it will return to "Live Show Mode" after finish cleared.

2. Patch

We will introduce how to patch dimmer channels and fixtures in this chapter:

- Patch DMX address of Units;
- Patch dimmer channels;
- Patch fixtures;
- Setup the fixture channels;
- Look over the Unit patch.

In order to make the Phantom 2048 to control your Units, you should first patch the Units. Each Unit fader can be patched to a channel or a fixture.

First of all, connect all the dimmers and fixtures by DMX cables. Then, patch every channel or fixture to each Unit button. Phantom 2048 contain 8 Unit pages, each of which can be patched to 30 Units. So you can patch up to 240 Units by changing pages.

2.1. Patch the Unit Address

When you patching dimmer channels or fixtures, Phantom 1024 will automatically distribute the free DMX addresses to avoid the overlap, discontinuity and waste of DMX addresses. You can also assign the DMX address of fixtures and dimmers by manual patching to carry out your preconcerted design, but you must make sure the DMX addresses don't overlap with each other.

When patching dimmer channels and fixtures, LCD screen will list the present patched addresses of the Units and those free DMX addresses, marked as Free.

2.2. Patch Dimmer Channels

Each Unit fader can be patched to a dimmer channel. After patching, you can control the brightness of the dimmer channel. A dimmer channels comprise of one or more DMX addresses. If you change the level of a dimmer channel, dimmers of the DMX addresses controlled by the channel will get the same brightness value.

Example: Use 1st-6th addresses of DMX output port B, to patch a 6 channeled dimmer to the No. 21-26 Unit button of 1st page in Unit section, so that each of the 6 Unit faders can individually control 1 dimmer channel, thus each Unit button control a dimmer channel.

- Press **[Patch]** in the Function section to enter "Setup Patch" menu;
- Press **[S2]** [Patch Dimmer] to enter the menu;
- Use **[S2]** to select [Select DMX Output = B] mode. Now the LCD screen display the patching state of port B. "Free" means it's not patched;
- Press 001 by the Numeric keypad to set the DMX initial address as 1;

DMX	Unit	Channel	Device name	
B1	21		Dimmer	Select DMX Output=B
B2	22		Dimmer	
B3	23		Dimmer	
B4	24		Dimmer	
B5	25		Dimmer	
B6	26		Dimmer	
B7	free		-225	Page Down
B8	free		-225	
B9	free		-225	View by Unit Number
B10	free		-225	
B11	free		-225	
B12	free		-225	
B13	free		-225	
B14	free		-225	Quit this Menu

- Press No. 21-26 Unit buttons in the Unit section in turn to finish the patching of DMX address 1-6 to Unit 21-26;
- Press **[Patch]** to exit patching and return to “Live Show Mode”.

Example: Use DMX address 7th-12th of DMX output port B to patch a 6 channeled dimmer to Unit 30, that’s one Unit button control 6 dimmer channels.

- Press **[Patch]** in the Function section to enter “Setup Patch” menu;
- Press **[S2]** [Patch Dimmer] to enter the menu;
- Use **[S2]** to select [Select DMX Output = B], then the LCD screen will display the patching information of Port B, “Free” means the channel is not patched;
- Press 007 by the Numeric keypad to set the DMX initial address as 7
- Press Unit button 30 for 6 times to complete the patching of DMX address 7-12 to Unit 30;
- Press **[Patch]** to exit the patching and return to “Live Show Mode”.

DMX	Unit	Channel	Device name	
B1	21		Dimmer	Select DMX Output=B
B2	22		Dimmer	
B3	23		Dimmer	Page Up
B4	24		Dimmer	
B5	25		Dimmer	Page Down
B6	26		Dimmer	
B7	30		Dimmer	View by Unit Number
B8	30		Dimmer	
B9	30		Dimmer	Quit this Menu
B10	30		Dimmer	
B11	30		Dimmer	
B12	30		Dimmer	
B13	free			
B14	free			

2.3. Patch Fixtures

Fixture patching is a little bit different from dimmer channel patching. Dimmer channels have only one attribute, brightness, while fixtures have many attributes. After the patching of fixtures, you can use the faders to change the brightness, but other attributes not.

There are two Libraries in the console:

1. System fixture Library. The console has been uploaded the latest light library when it’s on sale. You can visit our website to download the newest library and upload it to your console.
2. User fixture Library. When you can’t find the model of your fixtures in the System Fixture Library, you can build one yourself.

When choosing the fixture, you can look over the details of the fixture, to make sure your choice correctly.

Example: Patch a Martin Mac2000 Profile fixture with 24 channels to Unit button 1 of the 1st page, using port A of DMX output, DMX initial address =1.

- Press **[Patch]** to enter “Setup Patch” menu;
- Press **[S3]** [Patch Fixtures] to enter “Select a Library” menu;
- Press **[S1]** [System Fix. Library];
- Select the sort order mode with **[S5]**. Here, we search by Manufacturer;
- Use Unit buttons (with English letters) to fast skip to the initial letter of the Manufacturer. Here, we press Unit 13 (the letter M);
- Use **[S3]** [Page Up], **[S4]** [Page Down] to switch the pages, use the **[↑]** or **[↓]** button to select Martin. Then press **[S1]** [Confirm], it will display all fixture models of Martin;
- Use Unit buttons (with English letters) to fast skip to the initial letter of the fixture model. Here, we press Unit 13 (the letter M);

DMX	Unit	Channel	Device name	
A15	1	EffectRot	Mac2000 Profile	Select Another Fix.
A16	1	Iris	Mac2000 Profile	
A17	1	Focus	Mac2000 Profile	Page Up
A18	1	Zoom	Mac2000 Profile	
A19	1	Pan	Mac2000 Profile	Page Down
A20	1	Pan Low	Mac2000 Profile	
A21	1	Tilt	Mac2000 Profile	View by Unit Number
A22	1	Tilt Low	Mac2000 Profile	
A23	1	SpeedLp/t	Mac2000 Profile	Quit this Menu
A24	1	Speed	Mac2000 Profile	
A25	free			
A26	free			
A27	free			
A28	free			

- Use **S3** [Page Up], **S4** [Page Down] to switch the pages, use the **↑** or **↓** button to select Mac2000 Profile 24CH;
- Here, press **S3** to check up the channel details of the fixture, press **S6** to return;
- Press **S1** [Confirm];
- Use **S2** to Select DMX Output = A;
- Console will automatically patch the DMX initial address. You can patch manually by using the Numeric keypad if necessary;
- Select page 1 of Unit section and press Unit button 1;
- Press **S6** to return;
- Press **Patch** to exit.

Example: Patch 9 Martin Mac2000 Profiles with 24 channels to Unit buttons 2 - 10 in the 1st page and use DMX output port A.

- Press **Patch** to enter “Setup Patch” menu;
- Press **S3** [Patch Fixtures] to enter “Select a Library” menu;
- Press **S1** [System Fix. Library];
- Select the sort order mode with **S5**. Here, we search by Manufacturer;
- Use Unit buttons (with English letters) to fast skip to the initial letter of the Manufacturer. Here, we press Unit 13 (the letter M);

Setup Patch				Select Another Fix.
Press Unit to patch-Mac2000 Profile				
To DMX =241 port=A				
DMX	Unit	Channel	Device name	
A239	10	Speed_p/t	Mac2000 Profile	Select DMX Output=A
A240	10	Speed	Mac2000 Profile	
A241	free			Page Up
A242	free			
A243	free			Page Down
A244	free			
A245	free			
A246	free			View by Unit Number
A247	free			
A248	free			
A249	free			
A250	free			Quit this Menu
A251	free			
A252	free			

- Use **S3** [Page Up], **S4** [Page Down] to switch the pages, use the **↑** or **↓** button to select Martin. Then press **S1** [Confirm], it will display all fixture models of Martin;
- Use Unit buttons (with English letters) to fast skip to the initial letter of the fixture model. Here, we press Unit 13 (the letter M);
- Use **S3** [Page Up], **S4** [Page Down] to switch the pages, use the **↑** or **↓** button to select Mac2000 Profile 24CH;
- Here, press **S3** to check up the channel details of the fixture, press **S6** to return;
- Press **S1** [Confirm];
- Use **S2** to Select DMX Output = A;
- Console will automatically patch the DMX initial address. You can patch manually by using the Numeric keypad if necessary;
- Select Unit page 1, press Unit button 2 and hold still until press Unit button 10, which can quickly patch the selected fixtures to Unit button 2-10;
- Press **S6** to return;
- Press **Patch** to exit.

Use **S1** [Select another Fix.] can patch other different model of fixtures; **S3** [Page Up] and **S4** [Page Down] can be used to view the patching.

2.4. Setting up the Fixture Channels

By setting up the swap of Pan and Tilt, you can control fixtures, which is installed against the stage, to swap Pan/Tilt axis, Invert Pan and/or Tilt, so that the mirror movement makes the control more direct and easier. Dimming channel can be inverted too.

Note: The setup should be done before you program the show. Otherwise, errors of moving direction will occur in running the program.

The dimming channel of the same fixtures will be inverted if you invert the dimming value.

- Press **[Patch]** to enter “Setup Patch” menu;
- Press **[S5]** [Fixture Alignment];
- Use **[↑]** or **[↓]** button to select the fixture you needed;
- **[S1]** for swap Tilt/Pan, **[S2]** for Pan Invert and **[S3]** for Tilt Invert, **[S4]** to invert the dimming channel of current type of fixture;
- Press **[S6]** [Quit this Menu];
- Press **[Patch]** to exit patching.

Fixture Attribute					Swap Tilt/Pan
CurrentDimmer=Normal					
Num	Unit Name	Swap	InvertX	InvertY	
1	Mac2000 Profile	NO	NO	NO	Pan Invert
2	Mac2000 Profile	NO	NO	NO	
3	Mac2000 Profile	NO	NO	NO	Tilt Invert
4	Mac2000 Profile	NO	NO	NO	
5	Mac2000 Profile	NO	NO	NO	Dimmer Invert
6	Mac2000 Profile	NO	NO	NO	
7	Mac2000 Profile	NO	NO	NO	
8	Mac2000 Profile	NO	NO	NO	
9	Mac2000 Profile	NO	NO	NO	Quit this Menu
10	Mac2000 Profile	NO	NO	NO	

2.5. View the Patching

Use the button **[View]** in the Numeric keypad to view the Patch of Unit, Preset and Playback. By pressing button **[View]** and holding still, then press Unit button, you can view the DMX address and the special setup of Pan/Tilt channel.

The LCD screen when pressing the button **[View]** + Unit button 1 shown as follows:

Mac2000 Profile			Playback Parameters
DMX Channels: 24 PatchAddress: A001			
AxisSwap: NO InvertTilt: NO InvertPan: NO			
1	M255		Preposition the LTP
2	M255		
3	M255		Edit Time
4	M255		
5	M255		Movement Effects
6	M255	21 M255	
7	M255	22 M255	Group
8	M255	23 M255	
9	M255	24 M255	
10	M255	25 M255	
		26 M255	
		30 M255	
Dimmer 100%			

3. Manual Control of Dimmer Channels and Fixtures

We will introduce how to manually control dimmer channels and fixtures in this chapter.

- Control dimmer channels and fixtures
- Change attributes
- Locate fixtures and Fan Mode
- Group
- View the output of the console

You can manually control all the dimmer channels and fixtures after finished patching them.

- Choose the Unit (select the Page number in the Unit section and press the correlative Unit button);
- Change their attribute value.

Shortcut: If you need to select Unit button 1-10, you only need to press Unit button 1 and hold still until you press Unit button 10.

Note: If the Unit buttons have not been patched to any fixtures or dimmers, you can not choose Units and the led of the Unit buttons will not be turned on.

3.1. View the output of the Console

In the “Live Show Mode”, the LCD displays the present attributes’ value (depends on the present Attribute button) of the patched Units on the present page. It displays as follows:

Unit No. Mark + *nnn*

There are 3 kinds of marks: M = manual setup data, P = preset data, L = locate data;

nnn shows the attribute value of the present Unit, 0 = minimum, 255 = maximum.

If the present Attribute button has 2 attributes, the LCD screen will show the output value of these two attribute simultaneously.

3.2. Live Show Mode

You can manually control the dimmer channels and fixtures in the “Live Show Mode”.

After patching the dimmers and fixture as the previous examples, if you fade in the faders of Unit button 1-10, 21-26 and 30, the LCD screen of “Live Show Mode” will be shown as follows:

Live Show Mode			Playback Parameters
1	M255		Preposition the LTP
2	M255		
3	M255		
4	M255		
5	M255		Edit Time
6	M255	21 M255	
7	M255	22 M255	Movement Effects
8	M255	23 M255	
9	M255	24 M255	
10	M255	25 M255	
		26 M255	Group
		30 M255	
	Dimmer		
	100% (255)		

3.3. Manual Control of Dimmer Channels

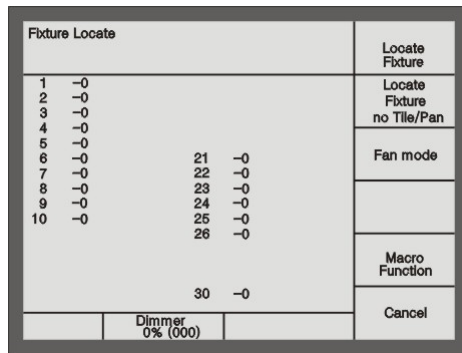
It's very easy to control dimmer Channels manually. You only need to fade in the patched Unit fader, then the patched DMX channels will sent out the brightness signals to the dimmer.

If you need to control more than one dimmer channels at one time, you select the Unit buttons and press Attribute button of the dimmer first, then use the control wheels to adjust the level.

3.4. Manual Control of Fixtures

It's also very easy to control fixtures manually. Firstly, you choose the fixture, one or more at one time.

- Select the fixtures in the Unit section;
- Press the button **Locate** to enter "Fixture Locate" menu;
- Press **S1** [Locate Fixture] to open white beam, central position for the unit of selected.;
- Press **S2** [Locate Fixture no PAN/TILT] to open white beam without change the fixture's PAN/TILT.



Select Attribute button in the Attribute section and use control wheel A or B to control the attributes of the fixtures.

The preset attribute values of some fixtures are saved in Preset section. When the fixtures are turned on, you can press A1-A10, B1-B10, C1-C10 in the Preset section to use various Attribute values you need. (e.g. Colour, Gobo and Location)

After adjusting attributes values of the fixtures, like the Location, colour or gobo, you can run the selected fixtures with the internal Effects of the console.

3.5. Run Macro

Macro is a sequence of fixtures program, which run with time parameter. Some of the fixtures can run the special operation, such as Reset, Lamp On/Off. After patched, the macro function of the fixtures which is patched from system library, will be set to the console automatic. If you want to check whether the fixtures have macro or to run the macro, please operate as follow;

- Select the fixtures in Unit section;
- Press **Locate** to enter "Fixture Locate" menu;
- Press **S5** [Macro Function], the LCD screen will display the macro function if the fixtures have;

- Press the corresponding button to run macro. Run a macro needs time. When it's running, the corresponding macro function will display in white, it will resume to normal display after finish running.
- Press **S6** [Cancel] to exit Macro menu.

3.6. Change the Attribute Values of Fixtures

After select the fixtures and the Attribute button, you can change the attributes by control wheels.

Example: Use control wheels to change the Pan and Tilt positions.

- Select fixtures;
- Press the button **Tilt/Pan** in the Attribute section;
- Use control wheel A to change the Tilt value, and use control wheel B to change the Pan value.

3.7. Fixture Location and Fan Mode

If you choose a row of fixtures and turn them on by locating, you will see a line of white light beams. Fan mode can produce a Fan of light beams, like rays of sunlight. The Fan Mode, while normally used on Pan or Tilt attribute, can be applied to any attributes; if the fixtures can mix colours, and Fan Mode can produce colourful effect. We kindly suggest you using no less than 4 fixtures to achieve a better effect.

- Select some fixtures in line;
- Press **Locate**;
- Press **S1** [Locate Fixture] and the selected fixtures show a row of white light beams;
- Press **Locate**;
- Press **S3** [Fan mode];
- Press Attribute button **Tilt/Pan**;
- Use control wheel to control the horizontal or vertical Fan effect;
- Press **S6** [Cancel] to return to "Live Show Mode" when finish adjusting, and the Fan effect of the fixtures continues.

Now you can carry on setting up the Tilt/Pan attribute of these fixtures, so that they will move to the proper location of the stage.

3.8. Manual Clear

Manually-controlled dimmer channels and fixtures can be cleared by pressing **Clear**, especially when you editing Cue and Chase, you can quickly clear those unneeded effects.

The LCD screen of "Live Show Mode" after clearing shows as follows:

Live show Mode			Playback Parameters
1	-0		Preposition the LTP
2	-0		
3	-0		
4	-0		
5	-0		Edit Time
6	-0	21 -0	
7	-0	22 -0	Movement Effects
8	-0	23 -0	
9	-0	24 -0	
10	-0	25 -0	
		26 -0	Group
		30 -0	
Dimmer 0% (000)			

3.9. Using Group

You can collect the same type fixtures into a Group, so that you can easily control them all together.

Example: Set Unit button 1-10 as Group 1

- In the “Live Show Mode”, select Unit button 1-10;
- Press **S5** [Group];
- Enter No. 1 in the Numeric keypad or roll the control wheel A to No. 1;
- Press **S4** [Save Group].

Once you create the group, you can rapid select fixtures or dimmer channels.

Example: Choose Group 1.

- In the “Live Show Mode”, press **S5** [Group];
- Enter No. 1 in the Numeric keypad or roll the control wheel A to No. 1;
- Press **S1** [Load Group].

An easier way to select a group:

- In the “Live Show Mode”, press button No.1;
- Press **S3** [Recall a Group].

3.10. Examples

How to set Martin Mac2000 Profile on the Unit button 10 to go yellow and change its position?

- In the “Live Show Mode”, Press Unit 10;
- Press **Locate**;
- Press **S1** [Locate Fixture];
- Press **A4** button in the Preset section, and set it as yellow;
- Press **Filt/Pan** button in the Attribute section, and change the position of fixtures by using control wheel A and B.

4. Preset

We will introduce how to use Preset buttons to set up colour, gobo and position in this chapter.

- Use the preset value of the Preset buttons
- Build up your preset value

Preset section can be used to preset a single attribute value or the whole stage data to a button. You can also use it quickly during live show or programming.

When you controlling the lights, you can use Preset to quickly move the lights to the stage center, change colours, gobos, and change the attribute value by the control wheels.

Phantom 1024 has 7 Preset pages, each of which has 30 Preset buttons, and they totals 210 Preset buttons, named “Preset Table”. You can use it to setup or adjust the attributes quickly. Normally, Phantom 1024 can upload 10 colours, 10 gobos and 10 positions to the patched Units. You can use them directly, or adjusted as your attribute value, or save into another button.

4.1. Using the Preset Value of the Preset Buttons

The Preset values of some fixtures have been saved in the Preset section. You can press the buttons in part A, B or C of the Preset section to add the needed channel values (e.g. Colour, Gobo and Pan/Tilt Position). The Preset datum of the fixtures will be automatically uploaded when patched. Usually, the uploaded Preset datum will be set to the buttons in the 1st page of the Preset section:

- **A1** – **A10**: Preset Colour;
- **B1** – **B10**: Preset Gobo;
- **C1** – **C10**: Preset Location.

By different editing, one preset button can be used in one or more kinds of fixtures. Users can recall the preset as follows:

- Select fixtures and recall: users can recall the preset after selected fixtures, those fixtures without selected will not be added in the preset.
- Not select fixtures and recall: users can recall the preset directly. In this case, all fixtures which can use the preset will be added in the preset.

4.2. View the Preset Buttons

You can press the button **View** in the Numeric keypad to view the Patch of Units, Preset and Playback. By pressing **View** and hold still, then pressing the Preset buttons in the Preset section, you can check the corresponding Preset number and see whether it is empty or not.

4.3. Edit Preset

Although you can save all the fixture attributes in one Preset button, it will be more convenient in operation to save only the edited part of attributes in each button. For example, merely save colour, gobo, location and etc..

Explanation of Edit Preset Mode:

- **Filter OFF** --- All attribute.
All the selected channel data of fixtures are saved under this mode.
- **Filter ON** --- Changed attribute.
Only the edited data of attribute channels are saved under this mode.
- **Filter ON** --- Current attribute.
Only the present-selected channel data of fixture attributes are saved under this mode. (The attributes are based on the present state of the Attribute section, viz. the present Attribute buttons status.)

Example: Save red of fixtures to the Preset section:

- Make all the fixtures go red by using attribute Colour. If they are not the same type of fixtures, please separate operated.
- After finishing the edited, re-select those fixtures (the Unit led are on);
- Press **Edit Preset** in the Function section to enter “Edit Preset” mode, the led of the Preset buttons carrying data will twinkle.
- Press **S1** to set “Filter ON --- Current Attr.”;
- Select a Preset button in the Preset section to save the preset data (the led off means the Preset buttons is empty).

We kindly suggest you to create and save your preset value in page 2-7 in the Preset section, leaving page 1 to save the preset value of the original library.

PRESET is allowed to add into the playback, implement to adjust the common chase step in different playbacks at the same time. Once the preset is edited, the playbacks which use that preset, will be renewed automatic. This function can be used in some sameness or similar occasions. When in different performing place, the lighting engineers can rapid adjust some preset to finish edited all playbacks.

5. Effect

We will introduce how to use Effect in this chapter:

- Select an Effect
- Setup the location of Effect
- Setup the size and speed of Effect
- Effect spread

There is an Effect Generator in Phantom 2048, offers 87 effect for intelligent lightings. Such as some complicated movement, colour, gobo, dimming and Iris effects. You can control the size, speed and direction of the effects with a spot of workload, to create out more various wonderful effects.

In order to understand how Effect works and the spread of Effect, you'd better use at least 4 neighboring fixtures to run the effect. Once you in control of the method, you can try to work out more and more interest effects.

5.1. How Effect Generator Works

Effect is a series of sequenced repeated movement of a pre-program. The representative effects are Circle, square, spiral and etc., they are the non repeat random effects. E.g., Lighting beams move in a round route on the stage.

When you run an Effect, the fixture will work according to the present setup. If the round Effect is applied to the Pan and Tilt attribute of the fixture, the center of the circle will depend on the present location of Pan and Tilt. By changing the Pan and Tilt position, the overall round effect will show on the stage.

Effect Generator can also be applied to other attributes of fixtures. You can use the Effect Generator to create various colours, gobos, irises, and many other changes. Each effect can be used to produce a regular change for one attribute.

5.2. Select an Effect

There are many Effects in Phantom 2048. You can see the Effect list on the LCD screen, use **←**, **→** button to switch pages, use **↑**, **↓** button to select Effect, and press **Enter** to confirm the choice.

Select an effect is quite similar to select a preset value by Preset buttons. When you select an Effect, it will be applied to all the selected fixtures.

- As the way of manually-controlling fixtures, select several neighboring fixtures in the Unit section;
- Press **Locate**;
- Press **S1** [Locate Fixture] to turn on all the selected fixtures;
- In the “Live Show Mode”, press **S4** [Movement Effects];
- Press **S1** [Select or Edit Effect], use **↑**, **↓**, **←**, **→** button under the Numeric keypad to choose the needed Effect;
- Press **Enter** to confirm the running, Press **Exit** to return to “Effect Setup” menu;
- Under this menu you can press **S4** [Effect Size and Speed], **S5** [Direction] and **S6** [Effect Spread] to control the Effect;
- Of course you can press **S3** [Delete Effect] under this menu to stop the running of the enabled Effect.

Rainbow can only be applied to colour-mixed fixtures. Effects with Iris and Focus can only be applied to the fixtures with those attribute of them.

As the effect names are restrained on the LCD screen list, we cannot explain the real effect by words. You'd better try to run them all through the patched fixtures.

You can run at most 5 effects of different attributes at one time when you control console manually.

5.3. Change Size and Speed of Effect

After you select the Effect, it's easy to change its size and speed.

- Run an Effect;
- Press **[Exit]** to return to "Effect Setup" mode, press **[S4]** [Effect Size and Speed];
- Use control wheel A to change Size of Effect and control wheel B to change Speed of Effect.

5.4. Change Position of Effect

Effect with Pan / Tilt is based on the present Pan / Tilt location. The light beams of the effect move around the location as a center. Other attributes will not be changed along with the altered location.

- Run an Effect;
- Press **[Tilt/Pan]** in Attributes section and use control wheel A and B to change the location of light beams.

5.5. Effect Spread

Effect will be more interesting and impressive if you apply them to multiple fixtures. Effect spread can produce endless changes. When using the control wheels to spread the Effect, the locations of light beams will be automatically and equally distributed to each point of the Effect. You can see the degree of spread on the LCD screen. Different degrees have different effects.

- Run an Effect;
- Press **[Exit]** to return to "Effect Setup" mode, press **[S6]** [Effect Spread];
- Use control wheel B to change the degree of spread.

6. Playback

We will introduce how to save a show program to a Playback fader in this chapter.

- Explain HTP channel and LTP channel
- Program Playback
- View the Playback program
- Cue and Chase
- Playback Page
- Run Playback
- Playback Parameter
- Parameter of Program's Runtime

6.1. What is HTP and LTP

Before saving a program, you need to know how Phantom 2048 works. It's very important to know how to playback the Effect and how HTP and LTP work?

When you are running two or more programs, or fade out a running program by faders. Phantom 2048 needs to know how to output the program. Phantom 2048 controls the brightness of fixtures by channels.

The principle for controlling dimmer channel or brightness of fixtures is "highest takes precedence" (HTP). If Playback faders of several HTP channels are controlling several different dimmer channels or fixtures simultaneously, the console only output the program with the highest level.

Other attributes, such as location, colour or gobo and etc., adopt the "last takes precedence" (LTP). If Playback faders of several LTP channels are controlling some attributes simultaneously, only the latest level the fader controlled will be output.

Important Concept: Usually, only brightness attribute adopt HTP, while other attributes adopt LTP.

6.2. Program Playback

The manual control method we introduced previously is a temporary control for some fixtures or dimmers. Once the console is turned off, the Effect produced by manual control will disappear. If you have make a wonderful Effect and hope to use it in the future, you have to save it in one Playback fader. Then, you can replay the Effect by fading in the fader later on.

There are 2 kinds of Playback programs: Cue and Chase. They are based on the manual control. A Chase comprises of several steps. And Cue equals to a step of Chase.

There are 60 Playback pages in Phantom 2048, each of which has 15 Playback faders to record the Effects. It can memorize 900 Playbacks in total. Once Playback can be used to save a Cue or a Chase.

6.3. View the Playback

You can view the Patch, Preset and Playback of the Units anytime you like by pressing **View** in the Numeric keypad. Pressing **View** and hold still, then press the Playback buttons in the Playback section, you can check the settings of the program saved in the corresponding buttons.

6.4. Cue

We will introduce the record mode, run mode and how to save Cue in this part.

6.4.1. Two Record Modes of Cue

- Fixture --- Record all Channels of the fixture.
- ChangedAttr --- Only record the adjusted attributes. In this mode, you can run different attributes of that fixture simultaneity.

Except the two Modes above, you can also select “Record All Stage”, Then whatever the fixtures are selected, will be save in Cue.

6.4.2. Three Run modes of Cue

- **Mode 1** --- Disable the HTP and LTP time, the HTP fade in depends on the fader;
- **Mode 2** --- Enable both the HTP and LTP time; if you set the HTP time as 0, the HTP level will depend on faders;
- **Mode 3** --- Enable both the HTP and LTP time; If you set the LTP time as 0, the LTP level will depend on faders.

Note: Wait in, Fade in, Wait out and Fade out belong to HTP timing, while LTP Wait and LTP Fade in belong to LTP timing

6.4.3. Save Cue

- Create the scenes and Effects you need by manual control;
- Press **Save to Cue** in the Function section to enter “Record Memory/Cue” menu;
- Use **S1** to choose Record mode;
- Use **S2** to choose Run mode;
- Press the corresponding Playback button to save the program.

When saving a Cue, only 4 Effects of different attributes can run simultaneously which will be saved. Under the manual control mode, only the first 4 effects will be saved when there are more than 4 effects and others will be neglected.

6.5. Chase

We will introduce how to create and edit Chase, how to control its speed and so on.

6.5.1. Create a new Chase

- Press **Edit Playback** in the Function section to enter “Program Playback” menu;
- Select the needed mode for program
Fixture --- Record all Channels of the fixture.
ChangedAttr --- Only record the adjusted attributes. In this mode, you can run different attributes of that fixture simultaneously.
- Choose the Playback button number of the program which needs edit in the Playback section. (There are 60 Playback pages, each of them contains 15 Playback buttons, which totals 900.) The red led of Playback buttons which have saved programs will twinkle, those without led are empty. Pressing an empty Playback button means you will save a new Chase in this button;
- Create the needed scene and Effect by manual control;
- Press **S1** [Save Step], you can save in two ways:
 1. Press **S1** [Save to the last Step] to save the step at the end of the program;
 2. Use the Playback buttons to select step number to save as a Chase step of that Playback program. For example, you have edited 4 steps. If you press a Playback button whose Number is larger than 4, the step will be saved as the 5th step; If you press Playback button 3, the previous step saved in button 3 will be replaced. If the led of the 15 Playback buttons are on, you only need to press **S1** [Save to the last Step]. Then you can see the step is save as the 16th step and the led of button 1 is turned on. When there are more than 15 steps, you can use the **←**, **→** button to turn over the pages.
- If you need to save the last step, you can also press [Save to the last Step] after pressing [Save Step];
- Repeat the operation of the manual control, new Effect creation and Step Saving;
- After finishing all the Chase steps, press **S6** [Quit this Menu] to return to “Live Show Mode” to run the Playback.

When you save the Chase, only two Effects of different attributes can run simultaneously which will be saved.

6.5.2. Edit Chase

We will introduce how to edit and insert the Chase steps.

6.5.2.1. Edit Chase Step

- Press **View** + Playback button to find the Chase you need to edit;
- Press **Edit Playback** to enter “Program Playback” menu;
- Press the Playback button of the needed Chase;
- Use the fader under the chosen Playback button to find out the needed Chase step;
- Create the needed scene and Effect by manual control;
- Press **S1** [Save Step];
- Press the corresponding Playback button of the step to cover the previous step program. For example, we have create 4 Chase steps, and we need to edit the 3rd step, so we press Playback button 3, then the previously-saved program of the 3rd step will be replaced.

6.5.2.2. Insert a step in Chase

- Press **View** + Playback button to view and select the needed Chase;
- Press **Edit Playback** to enter “Program Playback” menu;
- Press the Playback button of the needed Chase;
- Create the scene and Effects manually;
- Press **S3** [Insert Step];
- Press the corresponding Number of the Playback button you want to insert. For instance, there are 4 steps. You need to insert the present manual program between the 1st and 2nd step. So, you need to press Playback button 2, your present manual program will be saved as the 2nd step. The previous 2nd-4th step will move to 3rd-5th step. The inserted step temporarily shown with a decimal point until you press Soft-key [Renumber Step].

6.5.2.3. Delete a Chase step



- Press **View**+ Playback button to look up the needed Chase;
- Press **Edit Playback** to enter “Program Playback” menu;
- Press the Playback button of the needed Chase;
- Press [Delete Step];
- Press the corresponding Playback button of the step you like to delete.

6.5.3. Speed of Chase

When you create a Chase, the console will give a default time for each Chase step automatically. If you need to change the time of each Chase step, press [Set Step Time] and enter the step Number needed to edit by the Playback button. Then use the Soft-key to choose the Time option and input the time by second. Once you change the time of the steps, the console will save it. So, if you edit time by [Edit Time] under “Live Show Mode”, the edit can not change the step time setup by [Set Step Time]. Other step not edited by [Set Step Time], which remain the default time will change according to the new edit by [Edit Time]. But you can use control wheels to edit all the steps, no matter whether they are edited by [Edit Time] or [Set Step Time], it will change the time of all steps pro rata.

If you hope the time of every step to be identical, we suggest you not to edit any step time by [Set Step Time]. You’d better edit the step time by [Edit Time] under “Live Show Mode” after programming.


6.6. Change Playback Page

Use the ,  button of Playback page to change the page number. Turning to other page means turning to another 15 programs.

When you fade in a program and change the Playback page while it’s running, the program will keep running and not be replaced by the new Playback page.


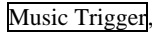



If some Playback button leds are twinkling after changing Playback page, it means the corresponding Playback faders saved the same programs as those faders before changing pages. If you need to run the programs of the new page, you have to fade out the previous program and fade in again, thus the fader will show the new program after changing the page.

6.7. Run Playback

It’s easy to run a Playback. Select the page of the Playback, and fade in the Playback. When running several playbacks, on the bottom of LCD will display which playback is running, press  + Playback button can change the present state of Playback. You can use control wheel to change the speed of the running Playback. For example, Chase is replaying, you can set up the music trigger, pause, the direction of running and etc.;

When Chase is replaying, you can use music trigger to make the program follow the bass beat, or you can pause anytime you like, or change the direction of Chase.

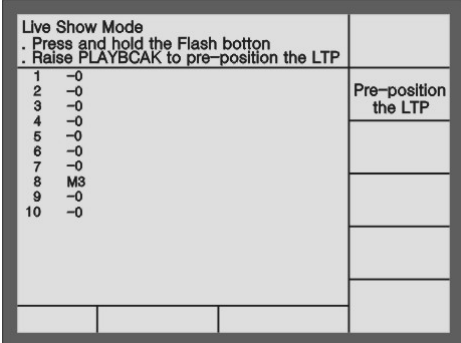
Playback allow to run different attributes of one fixture. For example, you can use a fader to run a group of fixtures moving, another fader to make those fixtures change colour or gobo, you can mix them if needed.

- Use a Playback fader to replay a Chase;
- Press  + the Playback button to set it as the current state;
- Press , then the led of the Playback button will be turned on and the Chase steps will follow the rhythm of the music. Press again, the led will be off, and the Chase steps will run as the preset speed;
- Press  can stop the Chase and stay at the current step. Press again will continue the Chase. Note: if the Chase step contains Effects, the Effect will run continuously.
- Press  and  to change directions of the Chase.

6.8. Pre-position the LTP

In the “Live Show Mode” menu, press **S2** [Pre-position the LTP], LCD will display as follow:

In this state, press and hold still the flash button on top of Playback fader, raise the fader, the console will not open the dimmer of the moving fixture. It will output the PAN/TILT, GOBO and COLOUR first. Once release the flash button, the dimmer will be turn on immediately.



Live Show Mode		
. Press and hold the Flash button		
. Raise PLAYBACK to pre-position the LTP		
1	-0	Pre-position the LTP
2	-0	
3	-0	
4	-0	
5	-0	
6	-0	
7	-0	
8	M3	
9	-0	
10	-0	

6.9. Playback Parameter

Firstly, fade in the Playback fader, and press **S1** [Playback Parameters] under “Live Show Mode” to enter the menu for changing the Playback parameters. The upper part of the LCD screen display the current Playback number. The edit here of direction change, fade in time and link mode are for the current Playback. If you need to edit another Playback button, please Press **Shift** + the Playback button you need.

6.9.1. Change the Direction of Chase

If the current Playback is a Chase, press **S2** [Change Run Direction] to change the direction of the Chase, which equals the function of pressing **Go+** and **Go-**.

6.9.2. Change Link mode

When programming Chase, you may notice there is a “Link” entry on the LCD screen, which shows the link mode of each Chase step. “Link = ON” means the console will run the new Chase step after finish the present step; While “Link=OFF” means the present step will pause after finish, and you need to press **Go+** or **Go-** to run the next step.

Press **S4** [Change Link mode] to switch between the 3 modes (“Link mode = Automatic”, “Link mode = Manual”, “Link mode = Inside”) of the current Playback.

- Inside ----- run as the Link state of chase step;
- Automatic ----- run continuously regardless to the Link state of each step;
- Manual ----- Chase steps will pause after finish running and wait for your “Go” order. In this state, after fade in the fader, the corresponding button becomes a manual operation, the chase will run one step once you press the button.

6.10. Runtime Parameter of Program

You can set up all kinds of runtime parameter of playback:

- In the “Live Show Mode”, press **S3** [Edit Time];
- Choose the needed Playback button and edit the 6 runtimes according to your need.

Each Playback contains 6 runtime parameters:

1. **Wait in** --- the time between the begin of a step and the begin of a Fade in.
2. **Fade in** --- the time a step spend on the HTP Fade in.
3. **Wait out** --- the time between finishing the Fade in of a step and beginning its Fade out.
4. **Fade out** --- the time spend on HTP Fade out when step stops.
5. **LTP Wait** --- the time between the begin of a step and the begin of an LTP Fade in.
6. **LTP Fade in** --- The time of all the LTP Fade in of the Playback.

You can also rapid edit the total time of Playback in the performance:

- Fade in a Playback;
- You can press **Shift** in the Numeric keypad and hold still, then press the needed Playback button to set it as the current state. Thus, you can control the speed of Chase by control wheels (The LCD screen will display “PB Speed”).

6.11. Change the Runtime Parameter Load Mode of the First Chase Step

In “Live Mode”, press **S1** [Playback Parameters], you can change the runtime parameter load mode of the first step of the running Playback. Use **S1** to select the 3 mode:

- Wait & Fade for All steps;
- Skip First Wait time;
- Skip First Wait & Fade time.

7. Advanced Function

The function contains Copy, Delete, Off, Lock, Shortcut operation, Rename and Channel level setup.

7.1. COPY

This function can copy Playback, Preset and Unit.

- Press Copy in the Function section to enter “Copy Menu”;
- Select the copy content (Playback, Preset or Unit);
- Select the copy target;
- Press Confirm to complete the copy.

7.1.1. Copy Preset

Example: Copy the Preset value of button A1 of the 1st page to button A10 of the 2nd page:

- Press **Copy** to enter “Copy Menu”;
- Select the 1st page in Preset section;
- Press Preset button **A1** to select the copy content;
- Select the 2nd page in Preset section;
- Press button **A10** to select the copy target;
- Press **S1** [Confirm] to copy, while press **S6** [Cancel].

7.1.2. Copy Playback

Example: Copy the Playback of the 1st fader of the 1st page in the Playback section to the 6th fader of the 1st page.

- Press **Copy** to enter “Copy Menu”;
- Select the 1st page in the Playback section;
- Press the button above the 1st fader to select the copy content;
- Press the button above the 6th fader to select the copy target;
- Press **S1** [Confirm] to copy, while press **S6** [Cancel].

7.1.3. Copy Unit Attribute

The Unit attribute copy function, allows to copy some or all attributes of a fixture to other fixtures. If you had set a colour or gobo with a fixture, you can copy the attribute to other fixtures of the same model rapidly.

Example: Copy the fixture attribute of Unit 1 to the same model fixture Unit 2:

- Press **Copy** to enter “Copy Menu”;
- Press Unit 1 to select the copy content;
- Select the attribute button in attribute section;
- Press Unit 2 to select the copy target;
- Press **S1** [Confirm] to copy, while press **S6** [Cancel].

Example: Copy all attribute of fixture in Unit 1 to the same model fixture Unit 2:

- Press **[Copy]** to enter “Copy Menu”;
- Press Unit 1 to select the copy content;
- Press **[S3]** [Copy All Attribute];
- Press Unit 2 to select the copy target;
- Press **[S1]** [Confirm] to copy, while press **[S6]** [Cancel].

Tips: When select the target, you can select several fixtures simultaniety, to copy the attributes to those fixtures.

7.2. Delete

Delete is used to diminish the unneeded Playback, Preset and Unit.

- Press **[Delete]** in the Function section to enter “Delete Menu”;
- Choose the Playback、Preset or Unit to delete;
- Choose the target button;
- Press [Confirm] to delete.

7.2.1. Delete Preset

Example: Delete the Preset value of button A1 in the 7th page.

- Press **[Delete]** in Function section to enter “Delete Menu”;
- Press **[S2]** [Delete Preset];
- Change the Preset page to the 7th page by using the **[↑]**、**[↓]** button in the Preset section. If there is Preset program in the button, the led of it will twinkle;
- Press Preset button **[A1]**;
- Press **[S1]** [Confirm] to delete, while press **[S6]** [Cancel];
- Press **[Delete]** return to “Live Show Mode”.

7.2.2. Delete Playback

Example: Delete the Playback of the 6th fader in 2nd Page of the Playback section.

- Press **[Delete]** in Function section to enter “Delete Menu”;
- Press **[S3]** [Delete Playback];
- Select the 2nd page in Playback section, the led of the buttons with Playback program will twinkle;
- Press the button of the 6th fader;
- Press **[S1]** [Confirm] to delete, while press **[S6]** [Cancel];
- Press **[Delete]** return to “Live Show Mode”.

7.2.3. Delete Unit

Strongly recommend: never delete the fixtures without a second thought, especially those which are used in the programs. Otherwise, it may leads to data error!

Once the error occurred, you have to clear all data to reedit the whole program.

Example: Delete Unit Number 30 of the 8th page in the Unit section.

- Press **Delete** in Function section to enter “Delete Menu”;
- Press **S1** [Delete Unit];
- Select Page 8 in the Unit section. The led of the patched Unit button will be twinkled;
- Press Unit button 30;
- Press **S1** [Confirm] to delete, while press **S6** [Cancel];
- Press **Delete** return to “Live Show Mode”.

7.3. Off

- Press **Off** in the Function section;
- Use **S1** [Switches off selected units];
- Use **S2** [Switches off effect of selected Unit];
- Use **S3** [Switches off All Effect];
- Use **S4** [Everything off].

Before you choose [Switches off selected units] and [Switches off effect of selected unit], you must select the fixtures in advance.

7.4. Rapid Select

In the “Live Show Mode”, input the number by the Numeric keypad can rapid select the items:

- Press **S1** [Select a Unit];
- Press **S2** [Recall a Preset];
- Press **S3** [Recall a Group].

7.5. Lock the Console

When you have to leave the console, you can use 4 digits by the Numeric keypad as a password and press **S5** [Lock Console] to lock the console. Under locking, it's void to press any buttons until you press the code again and press [Unlock Console] to unlock the console.

Note: Once the console restarts, the console will automatically unlock itself!

7.6. Rename Preset, Playback and Group

To rename Preset, Playback or Group, you need to press the Blank key to enter “Other Setup” mode, and press **S3** [Set Labels], then select the needed option and rename it by using the 1st -26th button in the Unit section as the 26 English letter keys and the NUMBER keys in the Numeric keypad. (Press **Shift** in the Numeric keypad to capitalize the 26 English letters). The ***** button is the blank key.

7.7. Set up the Channel Level

You need to press **Channel** in the Numeric keypad to enter “Channel Level”. The default mode is “Unit Channels”, all the Units. You can press [Select Unit] or [Load a Group] to select different objects of channels. You can enter numeral value to complete the assigned dimmer channel, or you can set up a output value to a group of fixtures.

7.7.1. Control the designated Unit Channel

Press **S1** [Select Unit], use cursor keys to select the needed Unit (if you need all the Units, select [Unit Channels]), press **S6** [Return] to return to the previous interface after selection. Use Numeric keypad to select the corresponding range of dimmer channel, press **S3** [Set Level] to enter a specific setup. If you only need to set them as maximum or minimum value, you can directly press [Set Level = Full] or [Off Level = 0] after you select the dimmer channel. For continuous increase or decrease the output value, you can press [Level +] or [Level -].

Example: Set the level of Channel 5-20 as 128.

- Press **Channel** to enter “Channel Level”;
- Select [Unit Channels];
- Input the first channel 5, press **Thru** (for range selection) in the Numeric keypad, then Input the last channel 20, press **AT** and the LCD screen will display “set to”, then you enter 128;
- Press **Enter** to complete.

7.7.2. Control Group of Dimmer Channels

- Press **Channel** to enter [Channel Level];
- Press **S2** [Load a Group];
- Input the Group number and press **S1** [Confirm];
- Then you can use the wheel to set the output value, or press **S3** [Set Level] and use **S2** – **S4** to set the output value;
- Press **Channel** to exit setting.

Note: When you choose a specific fixture, you should set up the dimmer range of the Unit according to its characteristics. If the fixtures are not in the consecutive dimming channel, you’d better use Group to assemble the Units which are controlled together, so that their outputs can be put out by groups.

8. Fixture Library Supervise

The fixture supervise contains 3 items of View system fixture library, User fixture library and Update the library.

There are two libraries within the console.

One is System Fixture Library.

Another one is User Fixture Library. User Fixture Library is a tool for you to create the fixtures not included in System Fixture Library. User Fixture Library is empty when the console leaves factory, you can create some fixtures when it's needed. In the user library, various fixture libraries in R20 of Avolites format can be uploaded as well.

8.1. View System Fixture Library

You can view the production date of the system fixture library, the fixtures and channels information in the library.

You can check whether the library is damaged or whether it is the latest one.

- Press **[Setup]** in the Function section;
- Press **[S2]** [Fixture Lib Supervise];
- Press **[S2]** [View System Fixture Lib];
- Press **[Setup]** to exit and return to the “Live Show Mode”.

8.2. User Fixture Library

If your fixture is not included in the system fixture library, you can add some in the user fixture library, where there will not be any conflict or overlap of those fixtures with a same name in the system fixture library.

8.2.1. User Fixture Supervise

You can view the fixtures in the user fixture library and add new fixtures, as well as edit and delete the user-defined information in the library.

- Press **[Setup]** in the Function section;
- Press **[S2]** [Fixture Lib Supervise];
- Press **[S3]** [UserFixture Library];
- Press **[S1]** [User Fixture Library], the LCD screen will display the list of user-defined fixtures.

8.2.1.1. Add a New Fixture

Firstly, you enter the library as viewing it and then select [Add a New Fixture]. There are 4 setup entries on the right of the LCD screen, those functions are explained below.

8.2.1.2. Setup Fixture Info

- Press **S1** [Setup Fixture Info];
- Set up the name of the fixture by at most 20 characters of English letters or Numbers. Use the Unit buttons to input the English letters and the Numeric keypad to input Numbers. Press **Enter** after finish;
- Input the name of the manufacturer, at most 14 characters. Press **Enter** after finish;
- Input the total Number of DMX channels.

8.2.1.2.1. Setup Dimmer & Pan/Tilt

Note: you can skip this setup menu, and enter the [Channel Attribute] directly belowed.

- Press **S2** [Dimmer & Pan/Tilt Setup];
- Input Dimmer channel Number;
- Input Dimmer Low channel Number;
- Input Tilt channel No;
- Input Tilt Low channel Number;
- Input Pan channel Number;
- Input Pan Low channel Number;

You should acknowledge that you need to input the channel Number with “Low” only when the dimmer, Tilt and Pan channel of fixtures are 16 bit. For those with 8 bit, you should input 0 or press **Enter** directly.

8.2.1.2.2. Channel Attribute

- Press **S3** [Channel Attribute];
- Use **↑**, **↓** button to move to the unwritten data channels;
- Input the channel name by one of the two ways:
 1. Input by using the Unit keys and Numeric keypad;
 2. Press the blank key in the Numeric keypad, and a common channel name list will pop up, use **↑**, **↓**, **←**, **→** to select and press [Confirm];
- Press the buttons in the Attribute section to distribute the Attribute buttons, (e.g. if the channel is Gobo, then press **Gobo**);
- Set up the parameters such as control wheels, press the Attribute buttons to assign the control wheels to control its channel value:

Press it once, use control wheel A to control its value;

Press it twice, use the control wheel A to control the fine 8 bit of the attribute (the fixture must be in 16 bit);

Press it 3 times, use control wheel B to control its value;

Press it 4 times, use control wheel B to control the fine 8 bit of the attribute (the fixture must be in 16 bit);
- Press [Save and Exit] to complete the attribute setup.

8.2.1.2.3. Senior Parameter Setup

- There are three parts of Senior Parameter Setup, which are Channel Type, Locate Data and Invert Channel.
- Note! If not clear the parameter below, please do not amend it optionally!
- Press **S4** [Advanced option];
- Use **↑**、**↓** buttons to select the needed parameter
- Press **S1** to adjust the type of channel:
 - H — HTP dimming channel
 - s — run the high 8 bit channel of the 16 bit LTP gradually
 - L — run the LTP channel gradually
 - S —run the high 8 bit channel of the 16 bit LTP immediately
 - I — run the LTP channel immediately
- Press **S2** to set the value of the fixture when it is turned on, Input the number directly, confirm it by pressing Enter;
- Press **S3** can invert the output value.

8.2.1.3. Edit User-defined Fixture

You can edit the parameters of the user-defined fixtures in the user fixture library.

Note! If the fixture is used in Playback, delete or edit it may lead to a running error of Playback!

- View the user fixture library;
- Use **↑**、**↓** buttons to select the needed fixture;
- Press **S2** [Edit existed Fixture], the edit is the same as the way to edit the newly added fixture;
- Press **S6** [Confirm] to enter the edit menu.

8.2.1.4. Delete User-defined Fixture

You can delete the user-defined fixture.

Note! If the fixture is used in Playback, delete or edit it may lead to a running error of Playback!

- View the user fixture library;
- Use **↑**、**↓** buttons to select the needed fixture;
- Press **S4** [Delete a Fixture];
- Press **S6** [Confirm] to delete;
- Press **Setup** to exit and return to “Live Show Mode”.

8.2.2. Load R20 File

In User Fixture Library, it allows user to load the fixture libraries in R20 of Avolites format which offered by fixture factory.

- In put the USB flash driver with R20 file;
- Press **S2** [Import Avolites R20 File];
- Use **↑**, **↓** to move the cursor to the needed R20 file;
- Press **S1** [Confirm].

Then, the fixture model had been added in the user library, the fixture can be used after patched.

8.3. Update the Library

The system fixtures library offered by Phantom 2048 includes most fixtures in the market. We will constantly collect and update the library documents. You can download a latest library from our website.

- You can save the library document in USB flash driver;
- Insert the USB flash driver into the USB jack at the back of the console;
- Press **Setup** to enter “User Supervise Menu”;
- Press **S2** [Fixture Lib Supervise];
- Press **S4** [Update Library];
- Use **↑**, **↓** to move the cursor to the Library name CodeLib.BIN, and the information like date of the document in the USB flash driver will be displayed;
- Press **S1** [Read File to Console];
- The LCD screen will display the percentage of the updating progress;
- When “OK” is shown, the update is finished;
- Press **Setup** to exit and return to “Live Show Mode”.

9. Setup

We will introduce fixture Library Supervise, Archive Menu Date Backup, System Parameters and User Setup in this chapter.

9.1. Archive Menu Backup

You can insert USB flash driver into the USB jack of the Phantom 2048 and save the program to the USB flash driver.

Suggestion: you'd better backup the data after you finish programming. It's advisable habit to backup the documents. Once the unpredictable accidents happened, you can resume it by the backup documents in the USB flash driver.

Before you perform the following operations, you need to insert the USB flash driver into the USB jack of the console, (extended line is permitted). Meanwhile, please insure the USB flash driver is in the FAT or FAT32 format, otherwise you need to format the USB flash driver via PC.

9.1.1. Upload the Data

- Insert the USB flash driver into the USB jack at the back of the console;
- Press **Setup** to enter "User Supervise Menu";
- Press **S3** [Archive Menu Data Backup] and wait until the console list the documents in the USB flash driver;
- Press **S1** [Load Show from USB] and use **↑** or **↓** cursors to select the needed Show document, whose extended name is SHO;
- Press **S1** [Read File to Console] to upload the data to the console;
- Press **Setup** to exit after finish.

9.1.2. Backup the Data

- Insert the USB flash driver into the USB jack at the back of the console;
- Press **Setup** to enter "User Supervise Menu";
- Press **S3** [Archive Menu Data Backup] and wait until the console list the documents in the USB flash driver;
- Press **S3** [Backup Show], you will be asked to input the name of Show backup document, which at most can be input 8 numbers or letters;
- Press **S1** [Confirm] to start the backup after enter the name of the document;
- Press **Setup** to exit after finish.

9.1.3. Utilities of USB Flash Driver

- Press **[Setup]**;
- Press **[S3]** [Archive Menu Data Backup];
- Press **[S3]** [USB Disk Utilities];

Now, the LCD screen will display 3 functions, which will be introduced as below:

9.1.3.1. View the Capacity of USB Flash Driver

You can view the capacity of the inserted USB Flash Driver.

After you pressing the **[S1]** [Get USB Capacity], the console will read the USB information and show the capacity and the spare space of the USB flash driver on the LCD screen.

9.1.3.2. Delete File

You can delete the files of the inserted USB flash driver. Note: the files can not be resumed after deleted!

- Press **[S3]** [Delete File];
- Use **[↑]** or **[↓]** to select the needed document;
- Press **[S1]** [DELETE] to delete and it takes several minutes;
- Press **[S6]** [Quit this Menu] until return to the “Live Show Mode”.

9.1.3.3. Format the USB Flash Driver

You can format the USB driver in FAT or FAT32 format on the controller. It is the same as format it on PC. If the USB flash driver is not in the FAT or FAT32 format, you have to format the USB flash driver by PC. (Note: exFAT and NTFS format are not permitted).

Note: the memories of the USB flash driver will be eliminated once it is formatted!

Press **[S4]** [Format USB Disk] and **[S1]** [Confirm] to format the USB flash driver. This operation can not change the format of USB driver, but can quickly eliminate the memories of the USB flash driver.

9.2. Set up the System Parameters

The upgrade of the software of the console and the elimination of internal data will be introduced in this part. Before update the version, please back up the data.

9.2.1. Upgrade the Software

- Download the latest software from <http://www.codelight.com> and save it in USB flash driver;
- Insert the USB flash driver;
- Press **Setup**;
- Press **S4** [System Parameters];
- Press **S1** [Upgrade Firmware];
- Use **↑**, **↓** to select the edition of the software to update;
- Press **S1** [Confirm], please read the notice on LCD screen;
- Press **Enter** to upgrade;
- After finish updated and restarted the console, please execute the operation of “clear all data”.

Note: Make sure the constant power supply and never cut off the electricity or turn off the console during the update!

9.2.2. Clear Internal Data

You can clear the internal data of the console.

- Press **Setup**;
- Press **S4** [System Parameters];
- Press **S4** [Internal data Clear];

There are 4 functions you can choose to operate. They are as follows:

9.2.2.1. Clear All the Preset Data

You can clear all the Preset data.

- Press **S1** [Clear all Preset];
- Press **S1** [Confirm] to clear.

9.2.2.2. Clear All the Playback Data

You can clear all the Playbacks.

- Press **S2** [Clear all Playback];
- Press **S1** [Confirm] to delete.

9.2.2.3. Clear all the Preset and Playback

You can clear all the Preset and Playback.

- Press **S4** [Clear Preset and Playback];
- Press **S1** [Confirm] to eliminate.

9.2.2.4. Clear all Data

Note: All the internal data, including Patch, Preset and Playback of the Units will be cleared, except the uploaded library!

- Press **S5** [Clear All Data];
- Press **S1** [Confirm] to clear.

9.3. User Setup

- Press **Setup**;
- Press **S5** [User Setup];

9.3.1. Set Up Language

You can set up the language displayed in the console, which is in English or Chinese. You can press **S1** [Set Language to Chinese] for Chinese and press it again for English.

9.3.2. Set Up MIDI

You can set up the parameters of MIDI.

Phantom 2048 can be used as a MIDI slave, thus MIDI Master can control its Playback program. It can also be used as a MIDI master, when another Phantom 2048 used as a MIDI slave. They are connected by MIDI cables and work in Master-Slave mode. You should make sure the two devices share the same MIDI channel before you use MIDI to control the console.

9.3.2.1. MIDI Device

- Press **S4** [MIDI Setup];
- Press **S1** to switch the 3 modes.
 - MIDI device = Disable --- MIDI function closed;
 - MIDI device = Master --- Phantom 2048 is set to be the main device;
 - MIDI device = Slave --- Phantom 2048 is controlled by MIDI Master.

9.3.2.2. MIDI Channel

- Press **[S4]** [MIDI Setup];
- Press **[S2]** [Used MIDI Channel = xx] to enter the setup menu of MIDI channels;
- Input the numbers of MIDI channels via Numeric keypad;
- Press **[S1]** [Confirm];
- Press **[S6]** [Quit this Menu];
- Press **[Setup]** to exit and return to “Live Show Mode”.

9.3.2.3. MIDI Command

Phantom1024 can deal with the related MIDI command:

- Command of setting up a Playback Page: \$Bn xx(xx is the page NO.: 0~39)
- Command of running a Playback: \$9n pp ll
pp = Playback Number (0 - 14, decimal)
ll = output level of the Playback (0 – 127, decimal, 127= Max.)
- Order of controlling the running: \$An pp cc

10. Technological Specification

- 2048 Channels with 4 DMX optical isolated outputs.
- 240 units of intelligent fixtures or dimming channels.
- LCD display in Chinese/English.
- Two Optical Encoders.
- Up to 900 Playbacks controlled by 15 Playback faders × 60 pages.
- Up to 200 groups.
- Freely-editing 210 Preset, including various colours, gobos and positions, are controlled by 30 Preset buttons × 7 pages.
- Effect Generator provides circle, square, polygon, rainbow and other Effects.
- Over 8000 fixture Libraries in System, with the edit and create function of User Library, a new fixture can be added easily.
- To our website download fixtures Lib and firmware updated version.
- USB backup system enable user to backup the show in a file.
- Music trigger function for Chase.
- Can be controlled by MIDI Master. Phantom 2048 can be connected by MIDI signal, one for master, another for slave.
- The Data auto-saves.
- Option: 12V auxiliary light
- Power supply: AC 100-240V, 50-60Hz
- Size: 730mm × 490mm × 120mm
- Net weight: 14Kg approx

