LedSync850M
Mini LED Video Processor

User Manual

Contents

I. Safety precautions

Danger!

There is high voltage in the processor, to prevent any unexpected danger, unless you are maintenance, please do not open the cover of the device.

Warning!

a) This device shall not encounter water sprinkle or splash, please do not place anything containing water on this device.
b) To prevent fire, keep this device far from any fire source.
c) If this device gives out any strange noise, smoke or smell, please immediately unplug the power cord from receptacle, and contact local dealer.
d) Please do not plug or unplug DVI signal cable if the device is powered on.

Caution!

a) Please thoroughly read this manual before using this device, and keep it well for future reference.
b) In the event of lighting or when you are not going to use the device for a long time, please pull the power plug out of receptacle.
c) Nobody other than professional technicians can operate the device, unless they have been appropriately trained or under guidance of technicians.
d) To prevent equipment damage or electric shock, please don't fill in anything in the vent of the device.
e) Do not place the device near any water source or anywhere damp.
f) Do not place the device near any radiator or anywhere under high temperature.
g) To prevent rupture or damage of power cords, please handle and keep them properly.
h) Please immediately unplug power cord and have the device repaired, when
   i. Liquid splashes to the device.

ii. The device is dropped down or cabinet is damaged.
iii. Obvious malpractice is found or performance degrades.

II. Item list

Please unpack the product with care, and then check whether all the following items are included in the package. If anything is found missing, please contact the dealer.

Standard accessories

The accessories supplied with this LED Display Video Processor may differ from the figures contained in the User Manual, but they are applicable for the regions where you live.

		
1.5m power cord x 1	1.5m DVI cable x 1	1.5m USB cable x 1
		
BNC-RCA adapter x 1	PCB audio adapter x 1	User manual x 1
		
Disk x 1		

III. Hardware connections

1. Rear view

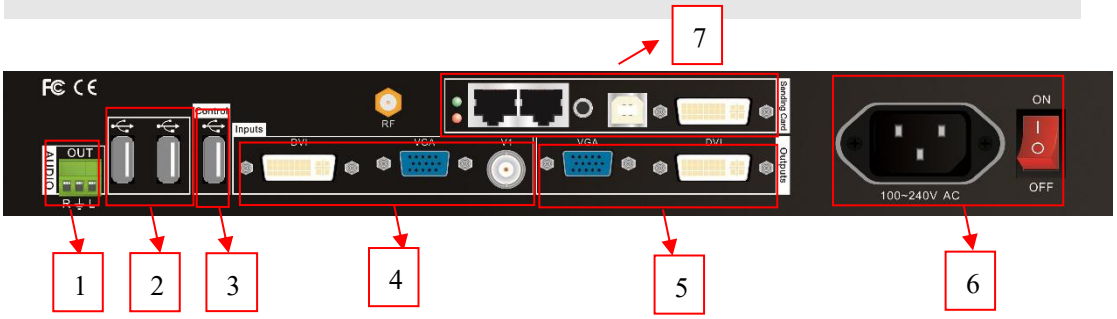


Figure 1

①audio output ports ② input ports for USB devices ③ USB control port ④input ports for other video signals ⑤ VGA/DVI output ports ⑥AC power jack and switch ⑦sending card slot (sending card is optional)

2. Description of ports

1) Video input signals **(INPUT)**

LedSync850M supports 3 video input signals including:

Ports	Description
V1	1 X composite video input (PAL/NTSC)
VGA	1X computer analog signal input
DVI	1X digital video interface

2) USB input ports

LedSync850M supports 2 USB inputs for USB drive and mouse.

3) Output ports for video signals

Ports	Description
VGA OUT	1 X VGA output port connected to a display device for monitoring (this port is strongly suggested to use when control or set up LedSync850M)

DVI OUT	1X DVI output port connected to a sending card or a sending card box

4) Output port for audio signal (**AUDIOOUT**)

Output the audio signal from USB drive.

5) Control port

USB input port: the upper PC software can be used to control LedSync820H through this communication port.

3. Connection diagram

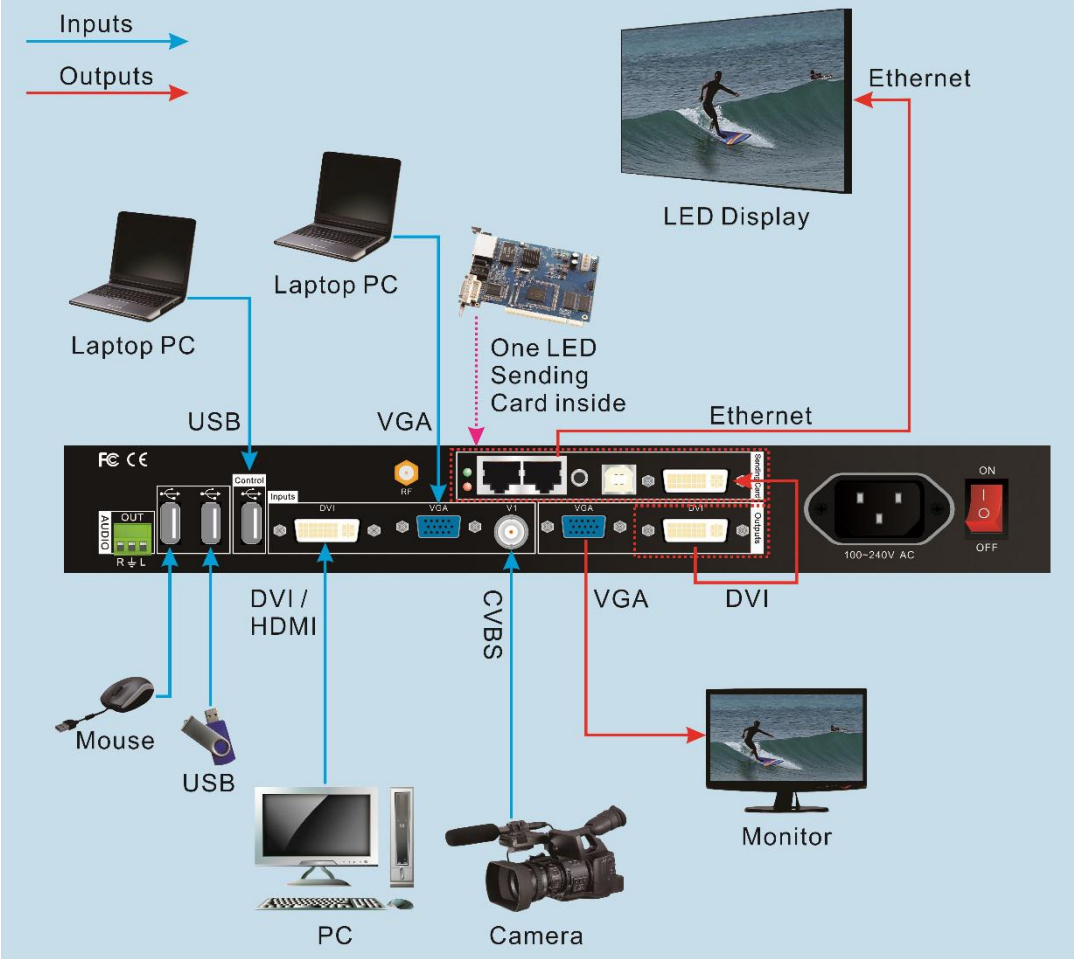
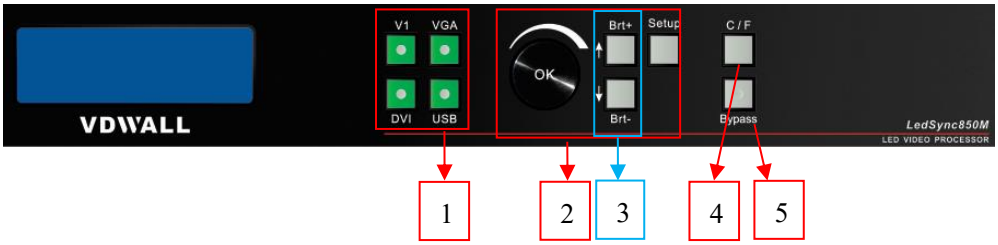


图 2

IV. Front panel

1. Diagram



1) **(V1, VGA, DVI, USB):** to select the input signal.
2) **(Setup, knob, ↑ , ↓):**to enter the setup menu and configure the image parameter.
3) **(Brt+,Brt-):**multi-function keys to adjust the brightness.
4) **(C/F)**: To select the switching effect which is seamless switching (**CUT**) or **Fade in/Fade out with time needed: 0.5S, 1S, and 1.5S.**
5) **(Bypass)**: to select full or part display of DVI/USB/VGA signal. The defaulted is full display and the indicator shows the current state of input signal.

2. Instructions

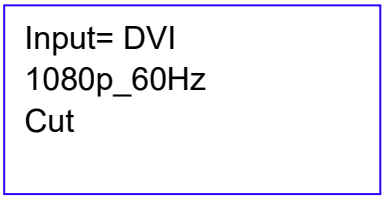
LedSync850M has totally 9 front panel keys and some of them are in operation when LedSync850M is powered on. The functions are as following:

1) Signal selection

Keys	Description
V1	To select the input signal from BNC port V1.
VGA	To select the PC input signal from VGA port.
DVI	To select the digital video signal from DVI port.
USB	To select the input signal from USB port.

When after selecting input signal, the first line of LCD screen displays

the input signal source you currently selected, as “Input = DVI”, and the second line of LCD displays the status of current input signal source. If the input is invalid, LCD displays “No input”, meantime relative input button indicator light flicker, LDD screen is black screen; if the input is valid, LCD display input signal format, as “1080p_60Hz”.



2) Brightness adjusting (**Brt+,Brt-**)

Keys	Description
Brt+	To increase the brightness of the output image until 64 maximally.
Brt-	To lower the brightness of the output image until 0 maximally.

LedSync850M supports 32 grades of brightness adjusting. “0” is the lowest value, while “64” is the highest value. To make sure of the complete gray level of the output image, the defaulted value is set as 64.

3) VGA auto adjusting (**VGA**)

When the current selected input signal is valid VGA, press the key twice and LedSync850M will automatically adjust the sampling parameters of VGA input to make the image clear and complete.

Normally this operation is only performed when a new VGA input is connected. The time needed for the adjusting depends on the condition of the input signal and normally it’s less than 1 minute, sometimes the operation needs to be performed several times until the image is clear, complete and stable.

4) Cut/Fade (**C/F**)

LedSync850M can realize seamless switching (Cut) or Fade in/Fade out (not available between DVI and USB) between two different input signals.

Seamless switching (**Cut**): while in this mode the message “cut” will appear in the third line on the LCD screen and the switching effect between two different input signals will be seamless.

Fade in/Fade out (**Fade**): while in this mode the message “Fade=1.0S” will appear in the third line on the LCD screen and the switching effect between two different input signals will be Fade in/Fade out. The time needed for the switching can be set as 0.5S, 1.0S or 1.5S.

5) Full display / part display (**Bypass**)

The key is used for switching between full display and part display of VGA/DVI. When the selected input signal is V1, to press the key won’t change its display status.

Status	Description
Full	The display status is full-screen. The output image is compressed to be fully displayed on LED screen and the indicator is OFF.
Part	In this mode, only a part of the output image will be displayed on the LED screen because it is not compressed and the indicator is ON.

Remark: when the width and height of VGA/DVI input signal is lower than those of the LED screen (say the out_Hori_width or out_Vert_height), this function is invalid.

6) USB module function

LedSync850M has built-in high performance Android system USB module, it supports 2 channels of USB input, and quick insert and quick play function.

The USB module supports 4K@60fps hardware decode, H.265 10 bit, H.264 and AVS+ numerous format etc, it can achieve terrific effect of video and pictureplay capability.

The module is very easy to operate, built-in Android system widely used, supports quick insert and quick play function: **after inserting U dish, automatically play the video file under U dish content.**

The module also supports WIFI, blue tooth function, meantime the feature of Android system open, very convenient for user to use the third APK to play video, remote control operate etc. the table below shows the main parameter of the USB module.

Hardware configuration	Specification parameters
CPU	Basic frequency 2GHz/ 64 bit/ core
RAM	DDRIII 1G
Storage capacity	8GB
Wi-Fi	Wi-Fi (802.11a/b/g/n)
USB2.0	2

V. Setup

The following settings must be made by relevant qualified technicians. For ordinary users, unless they have acquired adequate technical training, they shouldn't attempt to make the following settings.

LedSync850M has 5 categories of settings including 15 items. Engineering technicians can adjust the settings according to the specific requirements.

Category		Items	
1	Language	1	***Language 语言***
2	Output image setup	2	***Out Format***
		3	***Out_Hori_Width***
		4	***Out_Hori_Start***
		5	***Out_Vert_Height***
		6	***Out_Vert_Start***
3	Color/Sharpness	7	***Color***
		8	***Sharpness***
4	**Test pattern**	9	***Test pattern***
5	Version Information	10	***Version Number***
6	Factory Settings	11	***ADC Calibration***
		12	***Bias***
		13	***VGA output***
		14	***ByPass Sel***
		15	***Device init***

1. Enter setup menu

Enter setup: during operation, press "Setup" and then the knob (OK) to reach the first item.

Quit setup: during setup, press"Setup" to quit directly.

In setup mode, the functions of the knob and other three keys are:

Keys		Functions
Knob	Turning speed	The step value is in proportionto the turning speed.
	Turn anticlockwise	To decrease the value or select the previous value.
	Turn clockwise	To increase the value or select the

		next value.
	Press	To save the adjustment or the selected value.
↑		To switch to the previous item.
↓		To switch to the next item.
Setup		Quit the setup menu.

After entering the setup mode, settings will be displayed on the LCD screen:

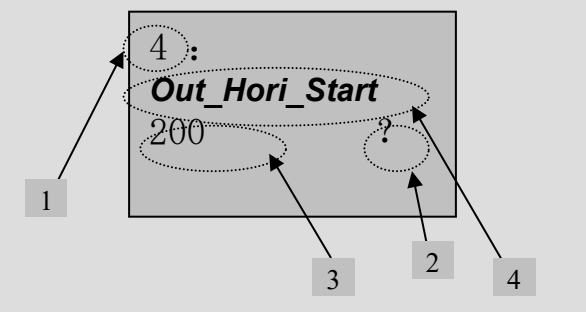


图 4

As the above shows, there are 4areas on the LCD screen:

Area	Description
1	The number of the current item.
2	“?” means whether to save the adjustment or “！” means the new adjustment is saved already and starts to take effect.
3	New value.
4	The current item.

2. Select language

Item 1: “***Language* 语言**”

In the setup menu, the first item is “*Language* 语言”. **LedSync850M**supports Chinese and English, turn the knob to select one of them and press it to save the setting.

3. Output image settings

LedSync850Moutputs images from VGA OUT and DVI OUT. There are 9 output formats as listed in the table below. The format can be set in the second item “Out Format”.

	Format

1	1024×768_60
2	1024×768_75
3	1280×1024_60
4	1280×1024_75
5	1366×768_60
6	1440×900_60
7	1600×1200_60
8	1920×1080_50
9	1920×1080_60

Item 2: "***Out Format***"

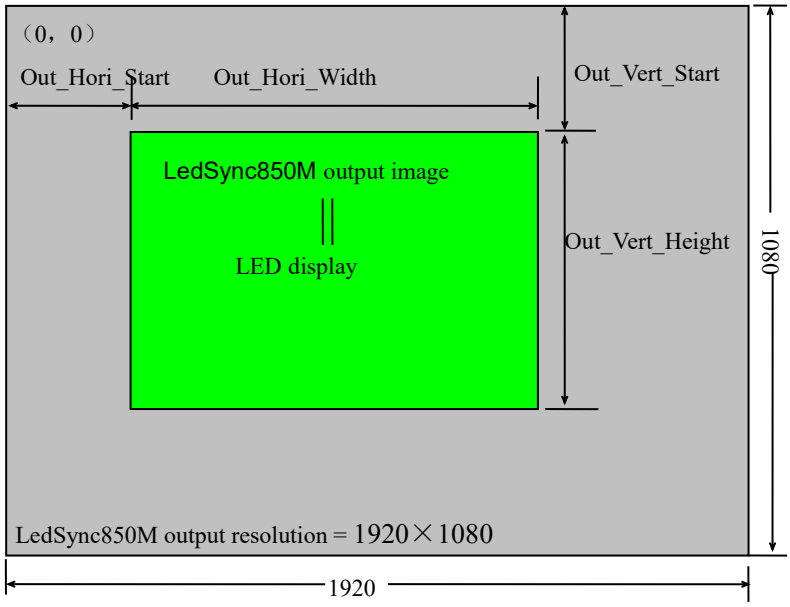
In this item, turn the knob to select one format and press it to save the adjustment.

For example, select "**1280×1024_60**", then the output resolution will be set as 1280×1024and the field frequency will be60Hz.

Please select the format of which the resolution should be same as or greater than that of LED display.

Item 3~6: "***Output Image Parameters***"

The actual definition of LED can be of any value, so we need to have LedSync850M output an image which is of exactly the same size to LED display so that it will be a full image:



As the above shows: the size and the position of an output image are defined by 4 types of parameters:

Item No.	Parameters

3	***Out_Hori_Width***
4	***Out_Hori_Start***
5	***Out_Vert_Height***
6	***Out_Vert_Start***

Remark: current parameters can be changed by turning the knob. The turning speed decides the step value of the adjustment. The location and the size of an output image can be previewed in the form of a white-frame window while making the adjustment. To press the knob will save and validate the settings.

4. Saturation/Sharpness

LedSync850M supports user-defined color and sharpness:

Item No.	Item Name	Description
7	***Saturation***	Adjustment range: 0~100; default: 50
8	***Sharpness***	Options: normal or sharp; default: normal

Remark:

1. To make sure the gray level of an output image is complete, the default is more suggested.
2. Color settings only apply to V1 and HDMI signals.

5. Test picture setup

LedSync850M has 36 test pictures inside, used for test LED display screen.

When the parameter value be “off”, close test picture; select another number and confirm, it means having selected which one of test picture in the 36 test picture.

6. Version Information

Version numbershows the information of the current version.

7. Factory settings

The following are factory settings, users are recommended to make

the settings under the guidance of the manufacturer's technicians. Any improper settings or operation may result in that the processor can't work properly.

Item 11: "***ADC Calibration***"

Some problems such as color cast or extreme darkness may appear when analog signals are input to the processor of which the white balance is not calibrated yet. **LedSync850M** can automatically calibrate the white balance according to the analog signals, to solve the above problem. The following is how to run the calibration: switch to a analog input signal, when the processor detect it and output it to a LED display, find the item No.9 "Version Number" in the setup menu and press "V1" 5 times to reach the item No.10 "*ADC Calibration*" and then press the knob to run the calibration.

Remark: before the processor leaves the factory, its white balance has been calibrated using standard signals, therefore please use this item with caution.

Item 12: "***Bias***"

To lower noise of low-gray images, LED display system normally will remove the low-gray part from input signals, but this will also bring information loss of images, especially dark images like night scenes.

LedSync850M can amend this by adjusting the parameter in "Bias", the adjustment range is 0—100. When some information of darkimages is lost, to add the value of "Bias" will bring back the lost information and fully display the image on LED display.

To make sure the gray level of output images is complete, the default is set as 50.

Find the item No.9 "Version Number", press "V1" 5 times and then "↑" to reach the item 11 "Bias". Turn the knob to adjust the value and press it to save it.

Item 13: "***VGAOutput***"

The option is invalid to the LedSync850M with latest USB module.

Item 14:"***ByPass Sel***"

The option is invalid to the LedSync850M with latest USB module.

Item 15:“***Device Init***”

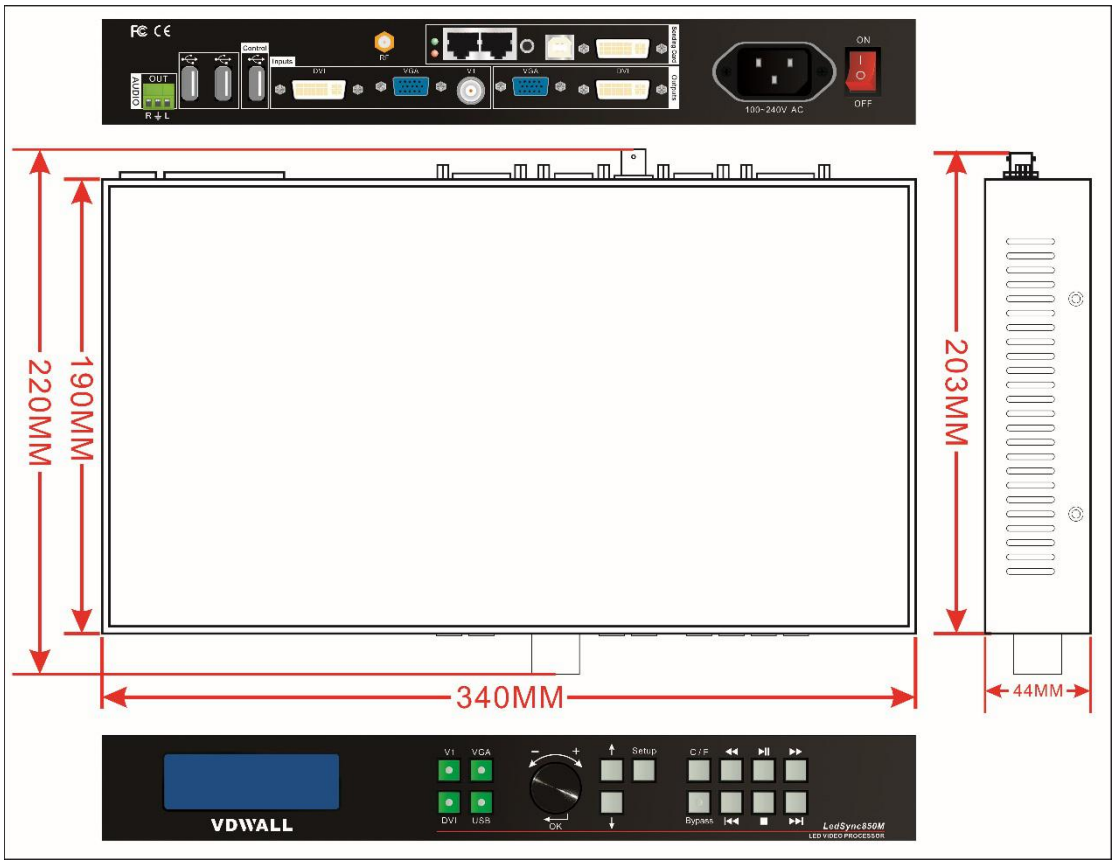
Find the item No.9 “Version Number”, press “V1” 5 times and then “↑” to reach the item 14“Device Init”. Turn the knob to select “Confirm”, the processor will be initialized and also remind “please restore”.

VI. Specifications

Inputs		
Type/Number	1×Video 1×VGA (RGBHV) 1×DVI (HDMI1.3) 1×USB	
Video Standard	PAL/NTSC	
Composite Video Amplitude / Impedance	1V (p_p) / 75Ω	
VGA Format	PC (VESA)	≤1920x1080 @60Hz
VGA Amplitude / Impedance	R, G, B = 0.7 V (p_p)/ 75Ω	
DVI Format	PC (VESA)	≤1920x1080 @60Hz
	HDMI1.3 (CEA-861)	
USB	Video File Format	Mkv, ts, avi, wmv, rmvb, mpeg, mpg, mp4, vob, mov, asf
	Video Encoding Format	H.265 AVC HD、VC-1(WMV HD)、MPEG-2 HD、MPEG-1、MPEG-4、Xvid
	Picture Format	JPG, PNG, BMP(maximum pixel:15 million)
Input Connectors	Video: BNC VGA: 15pin D_Sub(Female) DVI: 24+1 DVI_D USB: typeA	
Outputs		
Type/Number	1×VGA (RGBHV) 1×DVI	
Output Resolution	1024×768 @60Hz/75Hz 1280×1024 @60Hz/75Hz 1366×768 @60Hz	

	1440×900 @60Hz 1600×1200 @60Hz 1920×1080p @50Hz/60Hz
VGA Output Amplitude	R、G、B = 0.7 V (p_p)/ 75Ω
Audio Output	2.0Vp-p/10KΩ
Output Connectors	VGA OUT: 15pin D_Sub(Female) DVI OUT: 24+1 DVI_D
Others	
Control Method	Panel/Upper computer software
Input Voltage	100-240VAC50/60Hz
Overall Power Consumption	Max 20W
Environment Temperature	0-40℃
Environment Humidity	15-85%
Packing Size	410 (L) x 260mm (W) x 115mm (H)
Weight	G.W.:2.8Kg,N.W.:1.7 Kg

VII. Dimension：



VIII. Control Software

The ViewRGB LedSync850M control software is used to control LedSync850M processor.

1. Control Method

LedSync850M can receive the operating commands from the software to switch signals or change the size of output image. The PC software will control the processor via USB port.

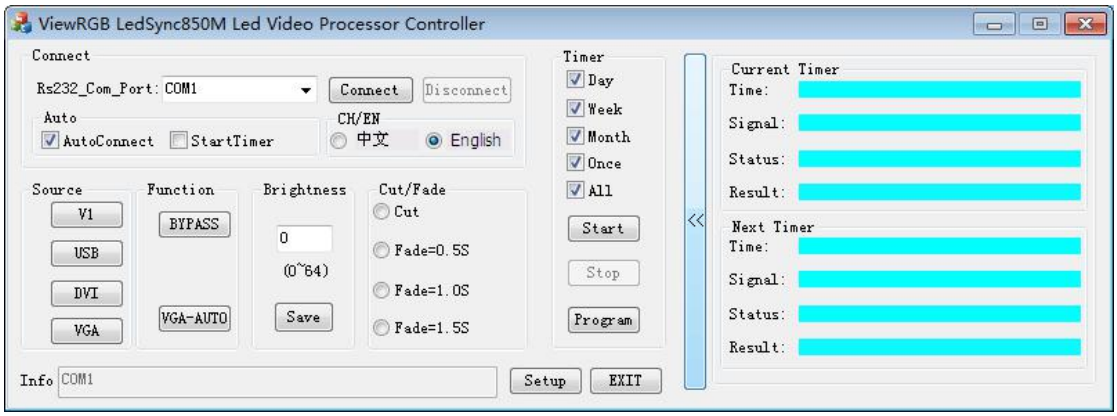
Users can manually operate the processor or control it by the software, or found a timing control plan to control the processor automatically.

In this method, first, connect the USB communication port of PC to that of LedSync820H and then run the program: 

2. User Interface

Double-click to run the software 

, the following interface will appear：



As the above shows, the interface contains 9 parts:

- Language
- Communication port
- Auto connect
- Source
- Function
- Brightness
- Cut/Fade
- Timer
- Information bar

3. Function Introduction

1) Language

The software supports two languages, i.e.: Chinese and English.

2) Communication port

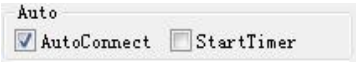
- Select the corresponding COM port in the field RS232_COM_Port. The software will automatically acquire the available serial ports of the current processor.
- Available serial port: 

- Non-available port: 

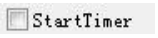
, the default is COM1.
- Click“connect”, the software shows

- When the device is successfully connected, all the functions on the interface are activated. Information bar shows

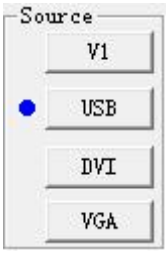
3) Auto connect



- Automatically connect the device 

- Automatically start the timer 

4) Source



- When the device is successfully connected, the software will automatically detect the current selected input signal and the signal will be marked with blue indicator. If the indicator is always on, it means the current selected signal is valid, if the indicator flickers, it means there is no valid input signal.

- Click another key to switch the input signal, the message of the new selected signal will be displayed on the information bar and also on the LCD screen of the processor.

5) Function

- Full display/part display (BYPASS): when display a single image and the selected signal is DVI/VGA, click 

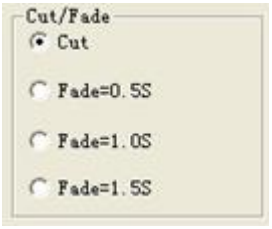
, if the indicator is on, it means Bypass is started successfully.

- Automatic calibration of output image from VGA: 

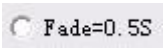
6) Brightness

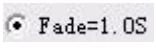
The highest value is 64 and the lowest is 0.

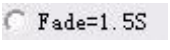
7) Cut/Fade



- Cut/Fade consist of seamless switching （Cut）and fade in/fade out (Fade) with time needed: 0.5s/1.0s/1.5s.
- Select 

to realize seamless switching between different input signals.
- Select 

to realize 0.5 second of fade in/fade out between different signals.
- Select 

to realize 1.0 second of fade in/fade out between different signals.
- Select 

to realize 1.5 second of fade in/fade out between different signals.

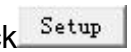
8) Timer

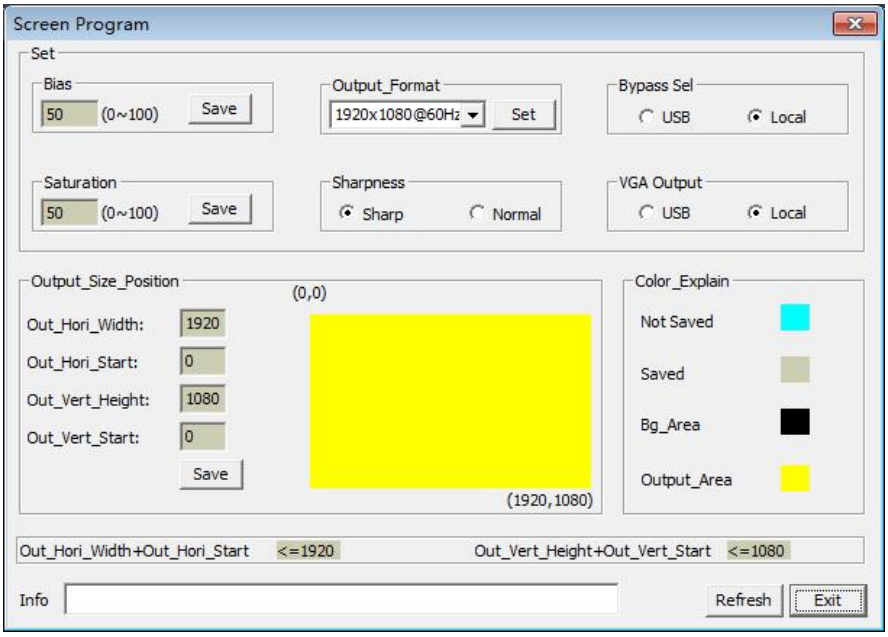
- The timer can be used to switch signals regularly according to the time set in advance.
- The timer can be used to set a day plan, a week plan, a month plan or a one-time plan.
- Select a preset plan and click“start”, the timer starts to take effect, or click “stop” to stop it.
- Click “Program” to enter the timer setup interface where timing plans can be checked, added, modified or deleted. Details can be checked in“Timer Interface Setup”.
- When the timer is started, ViewRGB LedSync850M control software can’t be shut downor the timer won’t work properly.

9) Information bar

The information bar shows the current operation and working status of LedSync850M.

4. User Interface

In the user interface click  to reach the setup interface:



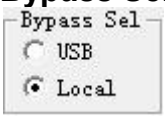
1）**Saturation**

2）**Bias**

3）**Output format**

4）**Sharpness**

5）**Bypass Sel**

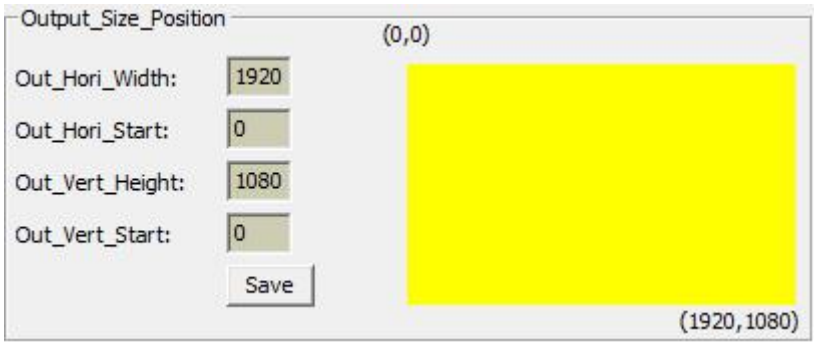


- The function is invalid to latest USB module;

6）**VGA Output**

- The function is invalid to latest USB module;

7）Output image parameters



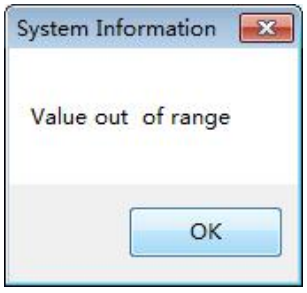
8）Explanation about range

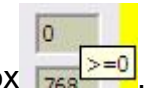
9）Explanation about colors

Special explanation:

- If the changing of value is not saved  , the background color of input box will be blue.
- If the changing is saved  , the color will be gray.
- Each time new output image parameters 

will be acquired based on the current output resolution  , if the value is out of range, system will remind



and the corresponding input box will be cleaned  ,“>=0” means the condition for content in the input box 

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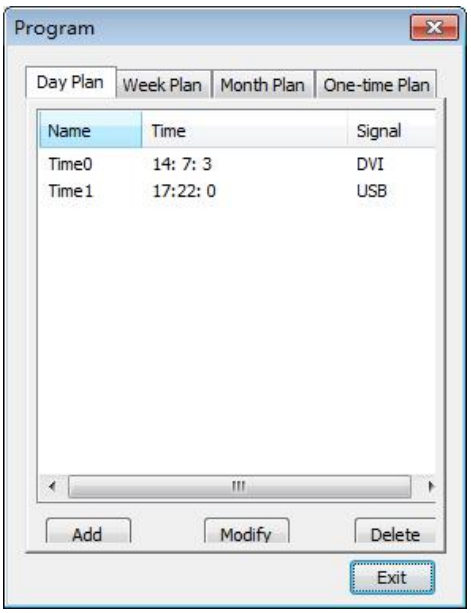
5. Timer interfacesettings

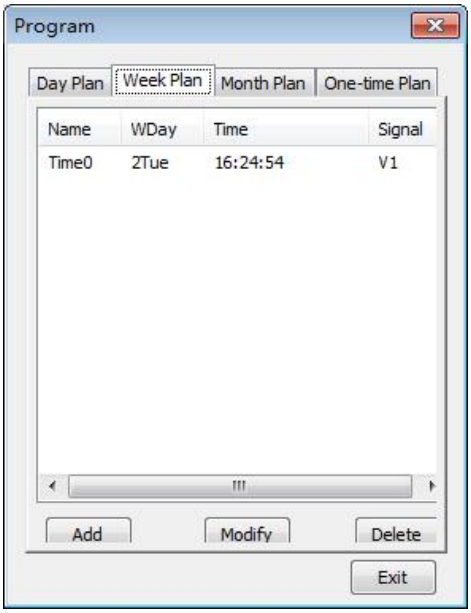
In the user interface click 

to enter the timer interface:

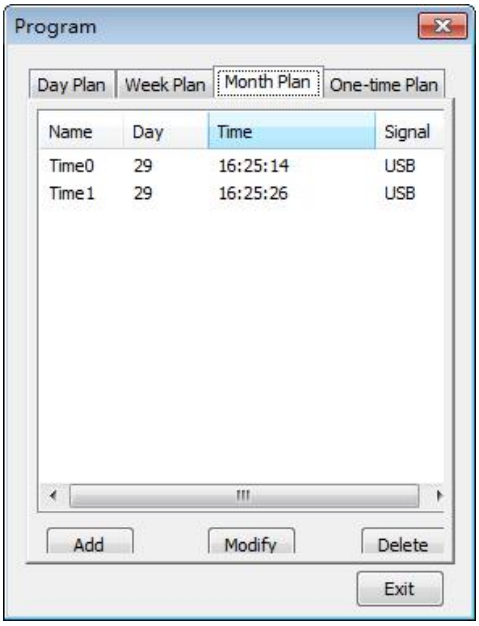
- **Day plan**



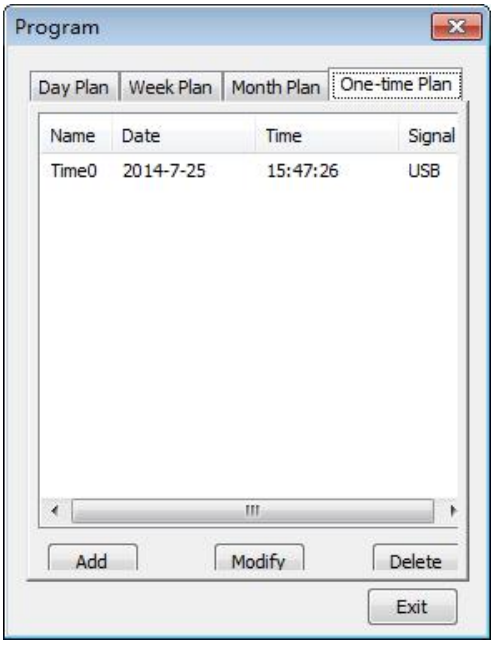
- **Week plan**



- **Month plan**



- **One-time plan**



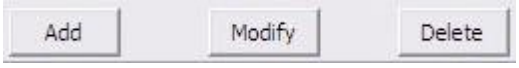
1) As the above shows, there are two types of plans:

- **Cycle Plan**
- **One-time Plan**

2) The cycle plan includes another three types of plans:

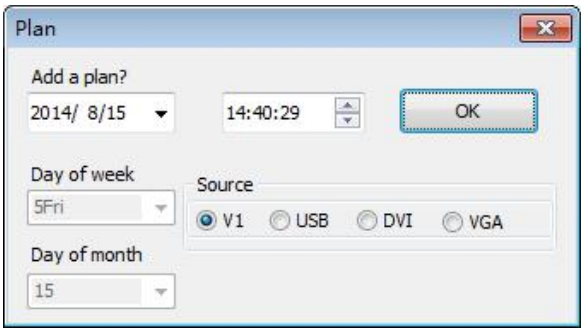
- **Day Plan**
- **Week Plan**
- **Month Plan**

User can select any desired plan:

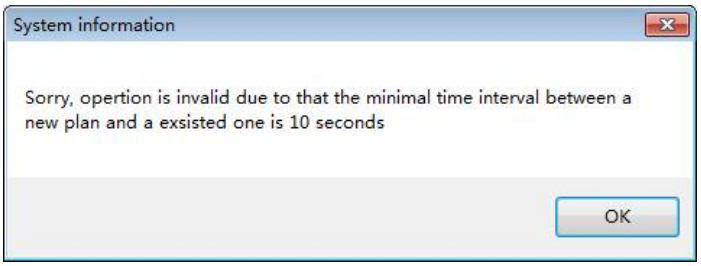
- To make settings in Day Plan can define hour, minute and second.
- To make settings in Week Plan can define week day, hour, minute and second.
- To make settings in Month Plan can define date, hour, minute and second.
- To make settings in one-time plan can define year, date, hour, minute and second.
- Cycle plan and one-time plan can work at the same time.
- Each plan has items like 

For example, click 

to add a day plan:

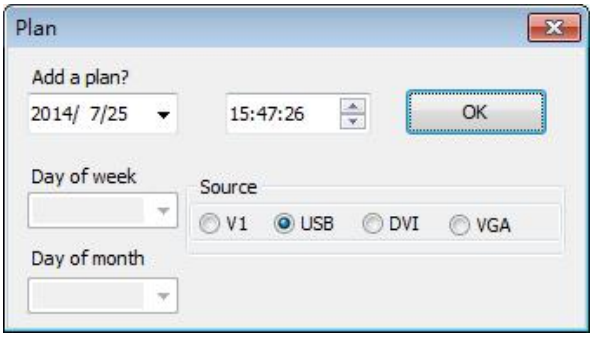


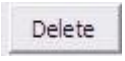
If a new plan needs to be added, but the time interval between it and an existed plan is less than 10 seconds, the operation will be invalid and the system will remind:



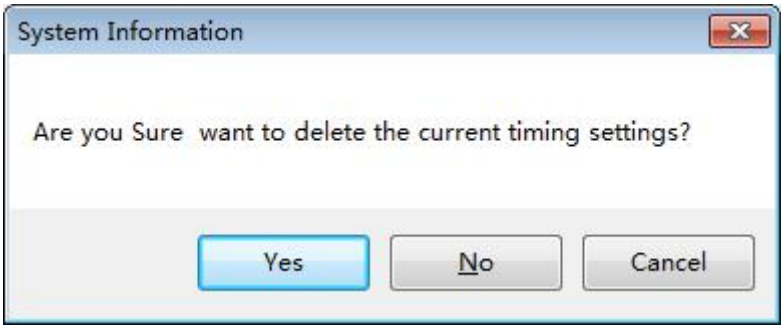
When need to 

, select the settings which need to be modified and the following interface will appear:



When need to delete some settings, click 

, and the following reminding message will pop up, click “Yes” to delete the selected settings:



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