



# HD Splitter with Scaler

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## LM-SP49

### User Manual

For the safety of you and equipment, please read the safety instructions carefully before using this equipment. If you have any queries in use, please read the instructions first. A detailed description of device operation is provided in the main body. If there is still doubt, please contact us. We will give you a satisfactory reply as soon as possible.

If there is any change in the instruction manual, without prior notice, please understand.

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## Chapter 1. Installation instructions

1	<b>Power adapter</b>	This equipment supports 100–240V AC input. In order to make the equipment work properly, please do not replace our standard power adapter easily.
2	<b>Power off</b>	Turn off all the power supply, unplug the power plug, etc. to ensure the safety of you and the equipment.
3	<b>Cables</b>	It is not possible to place objects on power lines, signal lines, communication lines and other cables. Cables should be avoided from being trampled or squeezed to prevent leakage or short circuit.
4	<b>Signal cables</b>	When the signal line is inserted or pulled from the equipment, the equipment needs to be cut off so as not to damage the equipment. If not, The damage is not in warranty
5	<b>Heat dissipating hole</b>	There may be openings on the outside surface of the equipment for heat dissipation. Do not block these openings to avoid heat accumulation, damage to the equipment or cause fire hazards.
6	<b>Equipment placement</b>	Equipment should be reasonably placed, such as standard rack, chassis, cabinet, or placed on a stable and flat work table to prevent equipment from falling.
7	<b>Environment</b>	The environment of equipment should pay attention to dust proof and moisture proof, especially prevent liquid from soaking and splashing into the equipment.
8	<b>Repair</b>	All maintenance work should be done by professional maintenance personnel. Do not attempt to repair equipment without training. To avoid the danger of electric shock, do not unlock the case.
9	<b>Safety precautions</b>	<p>1, there is electricity inside the equipment, non professional maintenance personnel shall not open the chassis, in order to avoid any danger.</p> <p>2, strictly prohibit water droplet or water splashing, strictly prohibit putting any liquid container container on the equipment.</p> <p>3, in order to prevent fire, the equipment should not be near the fire source.</p> <p>4, in order to fully ventilate, the front and back panels</p>

		<p>of the equipment should maintain at least 20CM gap.</p> <p>5, If the equipment makes strange noise, smoke or odor, the power plug should be unplugged immediately and handled by professional maintenance personnel.</p> <p>6, in case of thunder or long absence, please unplug the power supply.</p> <p>7, do not plug any object from the ventilation hole of the equipment, so as to avoid damage to the equipment or electric shock.</p> <p>8, it is not suitable to place this equipment in near water or other damp places.</p> <p>9, it is not suitable to place this equipment near heat sink or other high temperature places.</p> <p>10, please properly arrange the power cord to prevent breakage.</p> <p>11, under the following circumstances, the power plug of this equipment should be removed and handled by professional maintenance personnel.</p> <ol style="list-style-type: none"><li>1) when the plug power cord is damaged or worn;</li><li>2) when liquid splashes into the equipment.</li><li>3) when the equipment falls or the chassis is damaged.</li><li>4) when the equipment has obvious functional abnormalities or performance changes;</li><li>5) Regularly check whether the fan is working properly, if the fan is not working, it should be immediately unplugged and switched off the power supply of the equipment, handled by professionals.</li></ol>
<p style="text-align: center;"><b>This equipment is not suitable for non professionals to operate and debug. Users must receive professional training and guidance.</b></p>		

## Chapter 2. Product overview

The device is a multi-functional image processor, a single device can complete multiple signal switching and format conversion, video 180 degree rotation, USB decode audio and video functions. The product supports 1 channel AV, 1 channel VGA, 1 channel HDMI, 1 channel USB input, 1 channel HDMI and 1 channel independent audio output. The input and output signals can support full HD 1920 \* 1080 @60HZ. At the same time, all input signals of the product can support synchronous switching between images and audio.

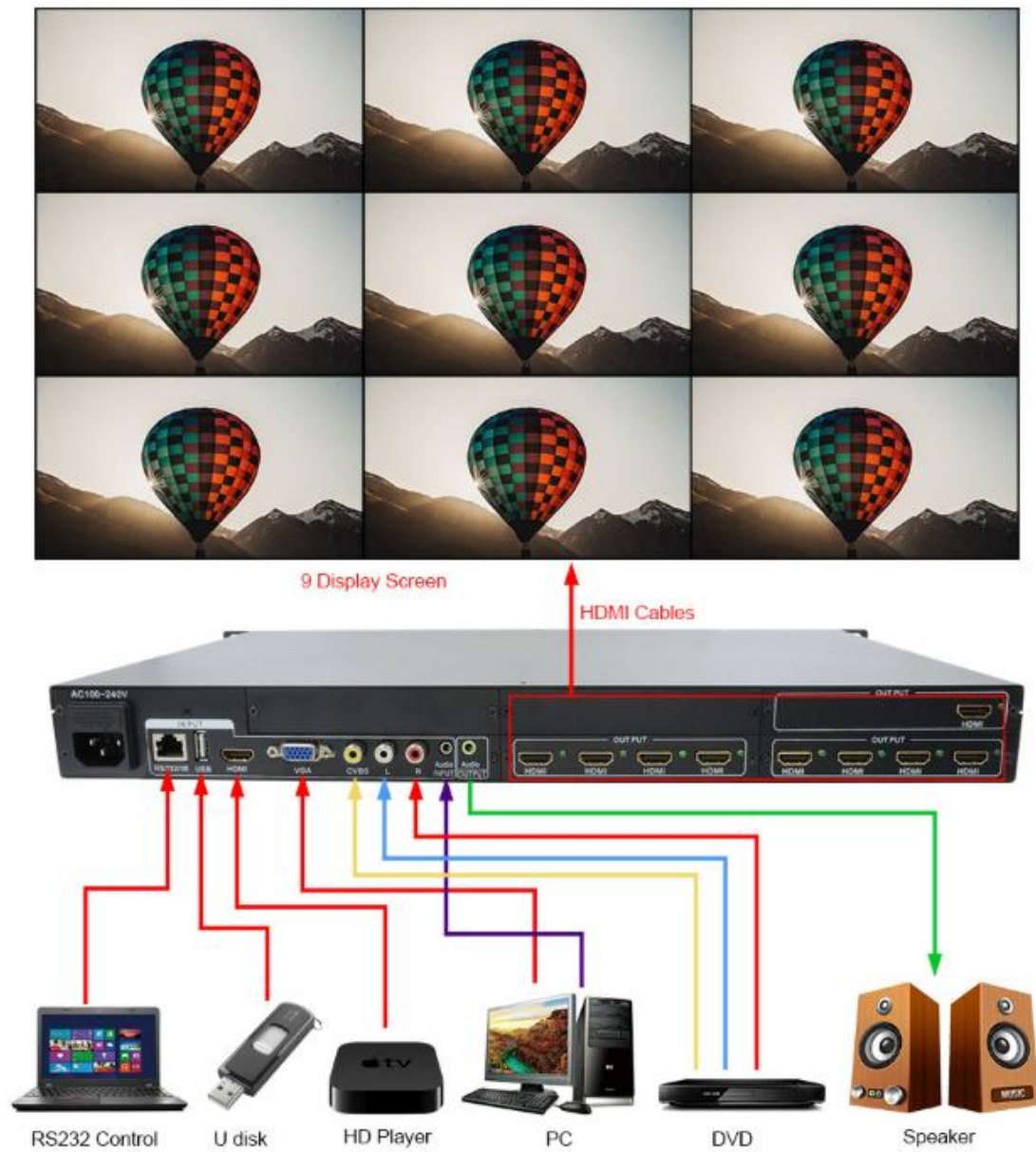
### **Features**

1. Built in Scaler inside;
2. With USB interface, most of the 1080P and below video can be decoded and the video can be played automatically and circularly.
- 3, support 180 degree flip;
4. Modular design. The output can be customized according to the actual situation of customers. The single machine supports 4-20 channels of customized output.
- 5, output resolution supports 1080P@60/720P@60/1024\*768@60 optional.
- 6, the maximum output distance can reach more than 20 meters.
- 7, the standard 19 inch 1U chassis, 100-240V AC input.

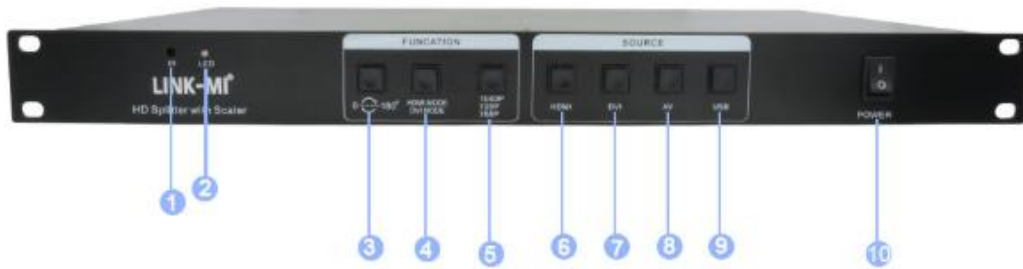
## 2.1 Technical parameter

Name	Specifications
Input signal	
VGA signal	DB15 interface, Binding 1 channel 3.5 audio interface; Support 640x480@85Hz to 1920x1200@60Hz.
HDMI signal	HDMI1.3(HDCP1.2) compatible DVI1.0
AV signal	Automatic recognition of NTSC, PAL and SECAM systems
USB	Standard USB2.0 interface, which can decode audio and video. Support video, picture, MP3, TXT; Streaming media format support: Mpeg1, 2, 4 (1920 * 1080 @30P and below) / Divx, Xvid (1920 * 1080 @30P and below) / RM, RMVB (1920 * 1080 @25P and below) / H.264 (1920 * 1080 @30P and below) / VC-1 (1920 * 1080 @30P and below) / MJPEG (640 * 480 @30P).
Output signal	
HDMI output	4-20 channel HDMI output, support HDMI1.3 and DVI1.0(option)
HDMI resolution	1920x1080@60Hz、1280x720@60Hz、1024x768@60Hz
Audio output	3.5 audio interface, left and right channel stereo audio
Other	
Control	Key panel, Remote control, RS-232 serial port
Power Supply	AC100-240V
Power waste	60W Max.
Size	
Dimension	440mm (L) x240mm (D) x44mm (H)
Weight	3.5Kg

## 2.2 Product topological graph



### Chapter 3. Panel operation introduction



- ① Remote control receiver
- ② Power light (green light is work, red light is standby)
- ③ All output video 1800 rotation
- ④ Output HDMI mode and DVI mode switch
- ⑤ Output resolution 1080P, 720P and 768P switch
- ⑥ HDMI input
- ⑦ DVI input
- ⑧ AV input
- ⑨ USB channel
- ⑩ Power on/off



- ① Power input port
- ② RS232 interface
- ③ USE input port
- ④ HDMI input port
- ⑤ VGA input port
- ⑥ CVBS input
- ⑦ L/R Audio input
- ⑧ Audio input port
- ⑨ Audio output
- ⑩ HDMI output



## Chapter 4. Introduction of remote control operation



## Chapter 5. Menu introduction

PICTURE	OPTION	TIME	SOUND
Picture Mode	OSD Language English	Clock	Sound Mode
Color Temperature	Restore Factory Default	Off Time	Balance
Aspect Ratio	MIRROR	On Time	Auto Volume
Noise Reduction	Out Mode 1080P60	Sleep Timer	Surround Sound
Screen	Out Type HDMI	Auto Sleep	SPDIF MODE PCM

### 1. Picture mode

1.1 picture mode: standard, mild, user, dynamic. Users can set their favorite mode according to their own preferences. The factory is set as a standard, and User changes are not recommended;

1.2 color temperature: medium, warm, user, cool. The factory is set as a medium, and User changes are not recommended;

1.3 aspect ratio: 0-20 optional. Users can zoom in the size of the video screen.

1.4 noise reduction middle: off, low, middle, high, default optional, The factory is set as a middle, and User changes are not recommended;

1.5 Screen: no use;

1.6 Color Range: 0~255 and 16~235 optional, Professional users can choose settings.

### Option mode

2.1 OSD language: It includes 18 different languages, like Chinese and English;

2.2 restore factory default: yes/no;

- 2.3 mirror: output video 180 degree rotation;
- 2.4 out mode: support 1080P、720P、768P optional;
- 3.5 out type: HDMI and DVI optional, some DVI monitor must choose DVI mode should be display video
- 3.6 OSD Duration: off、5sec、10sec、15sec optional;

#### Time mode

- 3.1 clock: Manually set date time;
- 3.2 off time: Set shutdown time;
- 3.3 on time: Set the boot time;
- 3.4 sleep timer: Set the sleep time;
- 3.5 auto sleep : off/on, The factory default settings is off, and customers are not advised to open it.

Note: To turn on the function of the timing on and off function, it is necessary to ensure that the power supply of the machine is uninterrupted. Once the power supply is interrupted, all the settings will disappear. .

#### Sound mode

sound mode: standard, music, movie, sports, user optional, Users can set their favorite mode according to their own preferences. The factory is set as a standard;

balance: -50~+50 optional, The factory is set as a 0

auto volume: off/on, The factory is set as off;

surround sound: off, surround, SRS Tru Surround XT, Users can set their favorite mode according to their own preferences. The factory is set as off

SPDIF mode PCM: no use;

EQ: Users can set their favorite mode according to their own preferences.

## Chapter 6. Introduction to USB operation

In the USB channel, the equipment has the default function of playing the video in the U disk automatically.

1. Enter the menu of USB, pay attention to the upper left corner information:

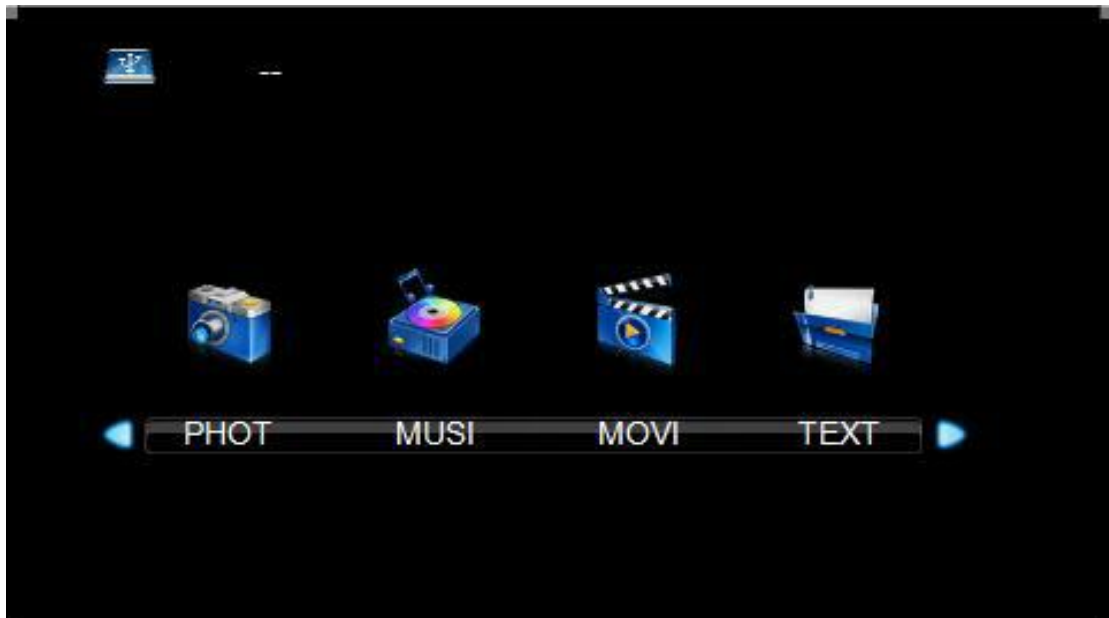


This representative has access to the U disk, and the machine can recognize the U disk correctly.

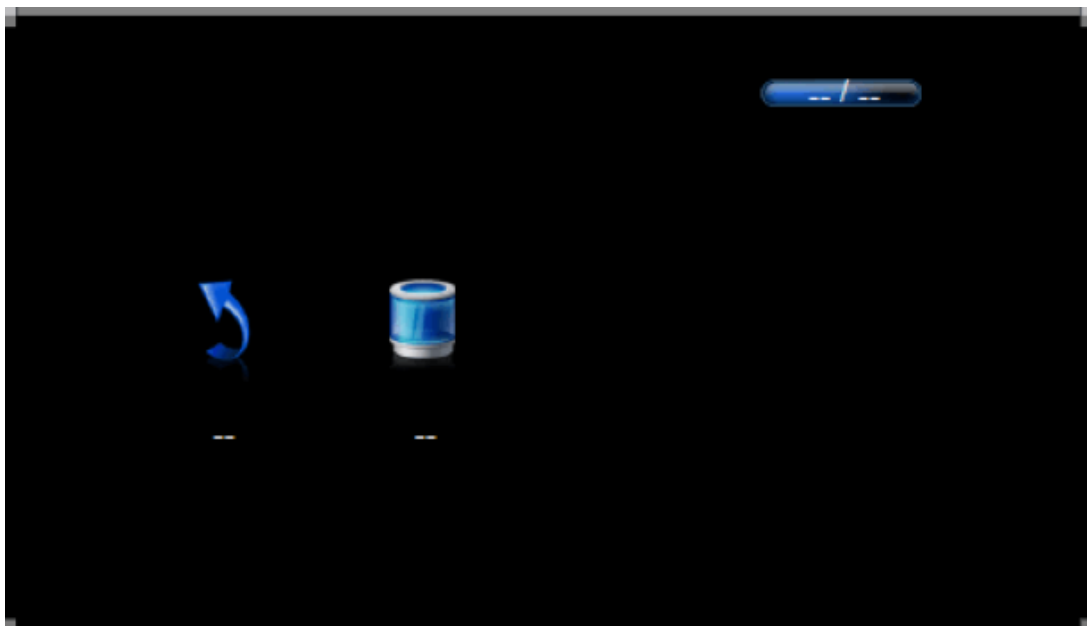


This machine does not have access to the U disk, or the machine can not recognize the U disk.

2. Choose pictures, music, video, text in the menu, press OK to enter the next level menu, this manual as video as an example:



3. Select the name of your U disk and press the OK key to enter the next menu.



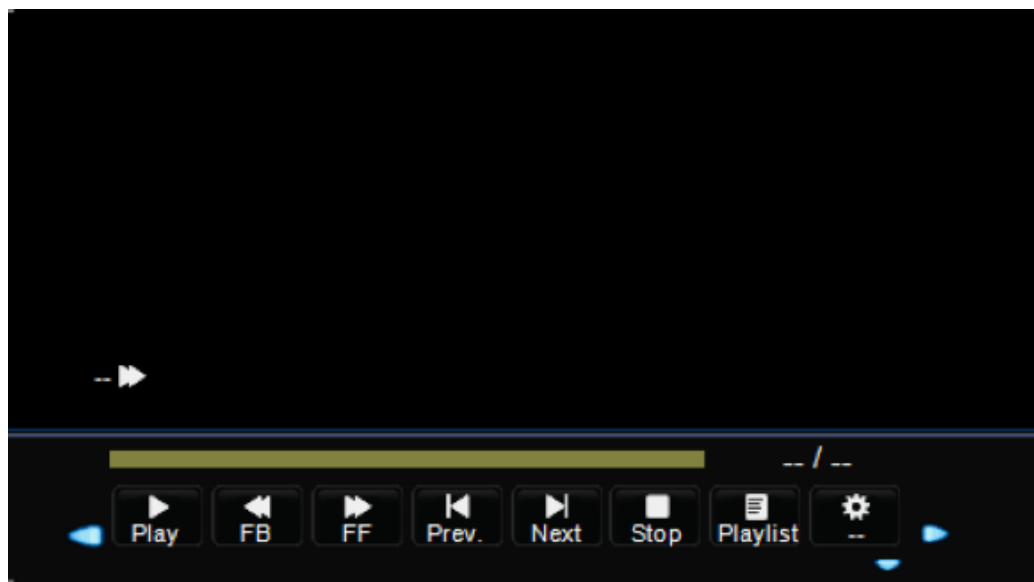
4. Select the video and play



Operation: Move the cursor to the current document to preview the current video file, press OK key to tick the selection, if tick, then press the play key **▶**,

then only play tick video files; if no tick, directly press the play key, then play all the video files.

5. Play the video file, press the OK key to pop up the sub menu:



- 1、Pause/play: play or pause
- 2、FB: Fast back
- 3、FF: Fast forward
- 4、Prev.: Previous
- 5、Next: next
- 6、Stop: stop
- 7、R\_All: All video playback
  - Random: Random loop play
  - R\_None: Single video loop broadcast
- 8、Set A: Set the starting point of the current video cycle.
  - Set B: Set the end of the current video loop.
  - None: No circular play is set.
- 9、Playlist: play list
- 10、Info.: Current video information
- 11、Slow F.: slow play

- 12、 Step F..: step play
- 13、 Zoom In: video zoom in
- 14、 Zoom .. : video zoom out
- 15、 Zoom mode: automatic, 16:9, 4:3 optional

## Chapter 7. Control Protocol

Baud rate: 9600 Data bit: 8

Check bit: None Stop bit: 1

AV channel: 0Xff, 0Xf7, 0x5a, 0x00, 0x30, 0x00, 0x80

VGA channel: 0Xff, 0Xf7, 0x5a, 0x00, 0x31, 0x00, 0x81

HDMI channel: 0Xff, 0Xf7, 0x5a, 0x00, 0x32, 0x00, 0x82

USB channel: 0Xff, 0Xf7, 0x5a, 0x00, 0x33, 0x00, 0x83

Output 1080P: 0Xff, 0Xf7, 0x5a, 0x00, 0x34, 0x00, 0x84

Output 720P: 0Xff, 0Xf7, 0x5a, 0x00, 0x35, 0x00, 0x85

Output 1024\*768: 0Xff, 0Xf7, 0x5a, 0x00, 0x3b, 0x00, 0x8b

Output HDMI mode: 0Xff, 0Xf7, 0x5a, 0x00, 0x3D, 0x00, 0x8d

Output DVI mode: 0Xff, 0Xf7, 0x5a, 0x00, 0x3E, 0x00, 0x8e

180° Rotation: 0Xff, 0Xf7, 0x5a, 0x00, 0x01, 0x00, 0x51