HD Video 180° Rotation controller

LM-MSW1

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.

Catalog

Chapter 1. Installation instructions

1	Power adapter	This equipment supports 12V DC input. In order to make the equipment work properly, please do not replace our standard power adapter easily.
2	Power off	Turn off all the power supply, unplug the power plug, etc. to ensure the safety of you and the equipment.
3	Cables	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	Signal cables	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	Heat dissipating hole	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	Equipment placement	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	Environment	The environment of equipment should pay attention to dust proof and moisture proof, especially prevent liquid from soaking and splashing into the equipment.
8	Repair	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	Safety precautions	1. there is electricity inside the equipment, non professional maintenance personnel shall not open the chassis, in order to avoid any danger. 2. strictly prohibit water droplet or water splashing, strictly prohibit putting any liquid container container on the equipment. 3. in order to prevent fire, the equipment should not be near the fire source. 4. in order to fully ventilate, the front and back panels of the equipment should maintain at least 20CM gap. 5. If the equipment makes strange noise, smoke or odor, the

		power plug should be unplugged immediately and handled by professional maintenance personnel.
		6. in case of thunder or long absence, please unplug the power supply.
		7. do not plug any object from the ventilation hole of the equipment, so as to avoid damage to the equipment or electric shock.
		8. it is not suitable to place this equipment in near water or other damp places.
		9. it is not suitable to place this equipment near heat sink or other high temperature places.
		10. please properly arrange the power cord to prevent breakage.
		11. under the following circumstances, the power plug of this equipment should be removed and handled by professional maintenance personnel.
		1) when the plug power cord is damaged or worn;
		2) when liquid splashes into the equipment.
		3) when the equipment falls or the chassis is damaged.
		4) when the equipment has obvious functional abnormalities or performance changes;
		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.
This equipment is not suitable for non professionals to operate and debug. Users must receive professional training and guidance.		

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.
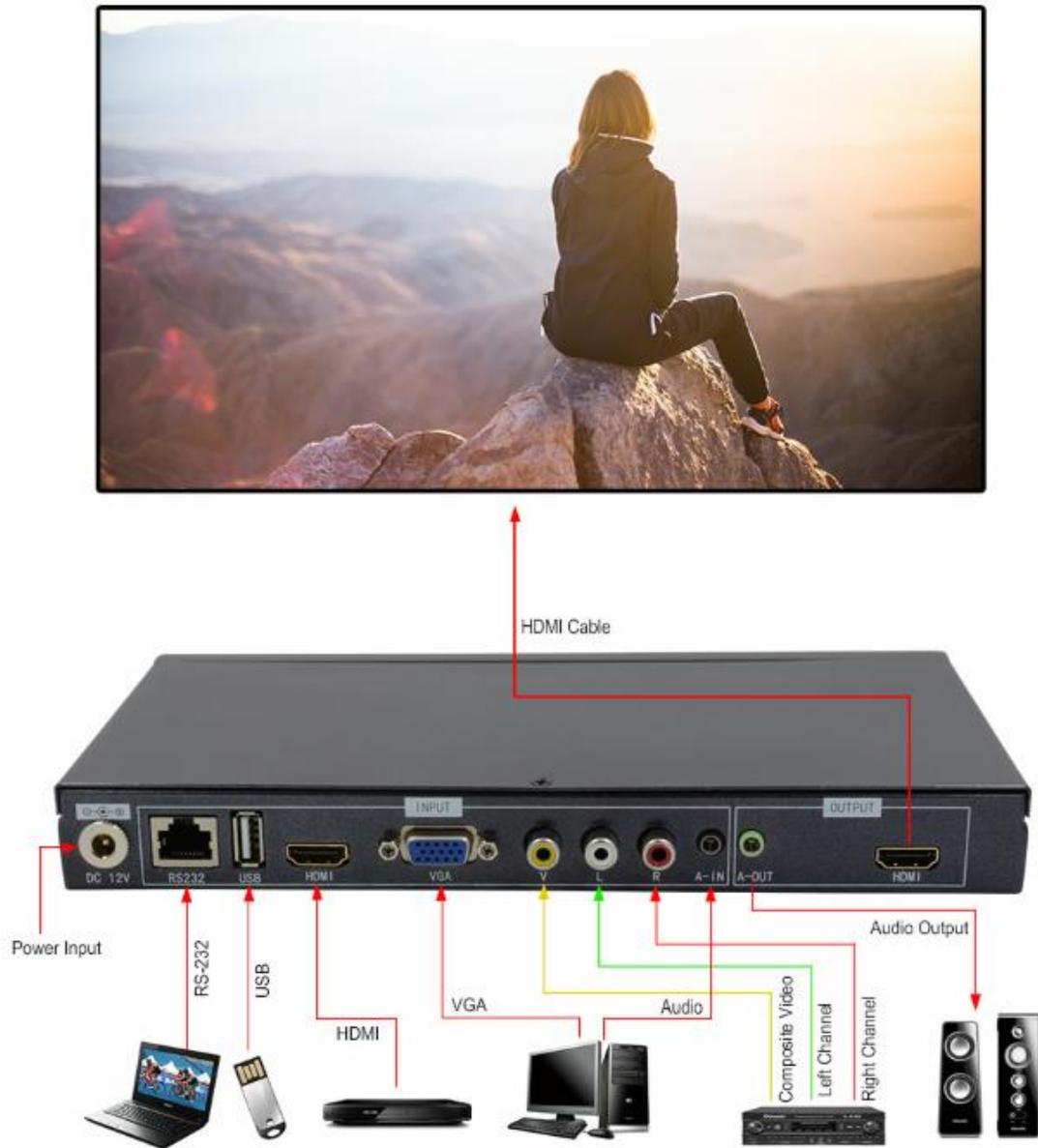
2.1 Feauter

1. Maximum support for full HD 1080P input and output;

2. Support HDMI\VGA\AV\USB input and build in scaler inside.

3, support all signal source to turn 180 degrees;

4. Output resolution is 1080P, 720P and 768P optional.

5, the output type has HDMI and DVI optional, compatible with HDMI and DVI interface display device;

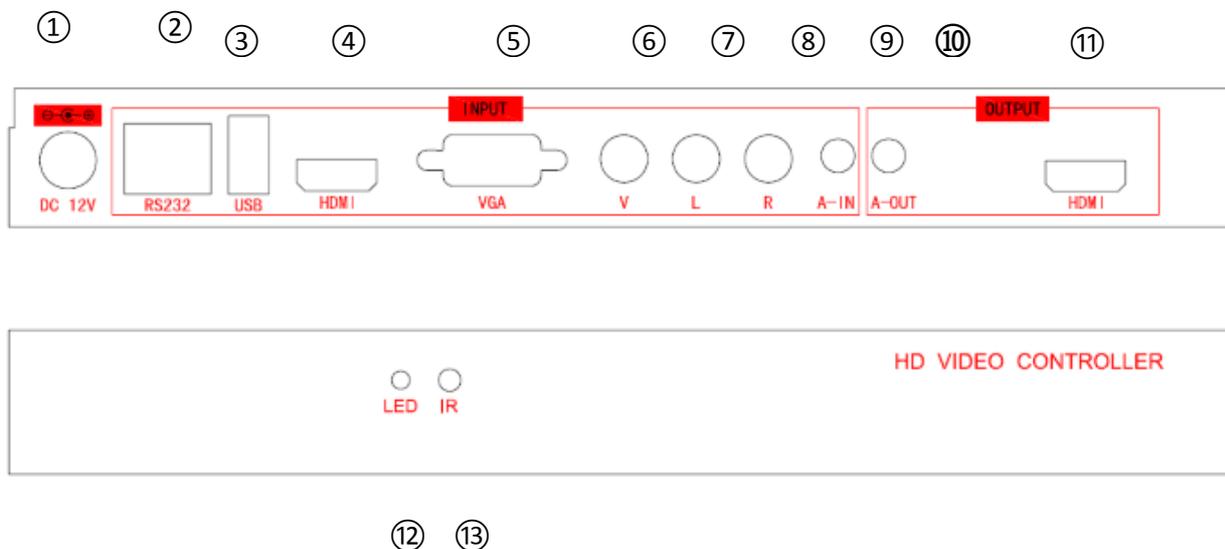6, output with long line drive function, the farthest can transmitm more then 10 meters.

2.2 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	1cahannel 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	Remote control, RS-232 serial port
Power Supply	DC12V
Power waste	10W
Size	
Dimension	238mm(L)x130mm(D)x27mm（H）
Weight	0.65Kg

2.3 Product topological graph

Chapter 3. Front and back panel introduction

①	DC 12V input	②	RS232 port
③	USB interface	④	HDMI input
⑤	VGA input	⑥	CVBS input
⑦	Left audio input	⑧	Right audio input
⑨	VGA audio input	⑩	Stereo audio
⑪	HDMI output	⑫	Power light（green light is work,red light is standby）
⑬	Remote control receiver		

Chapter 4. Introduction of remote control operation
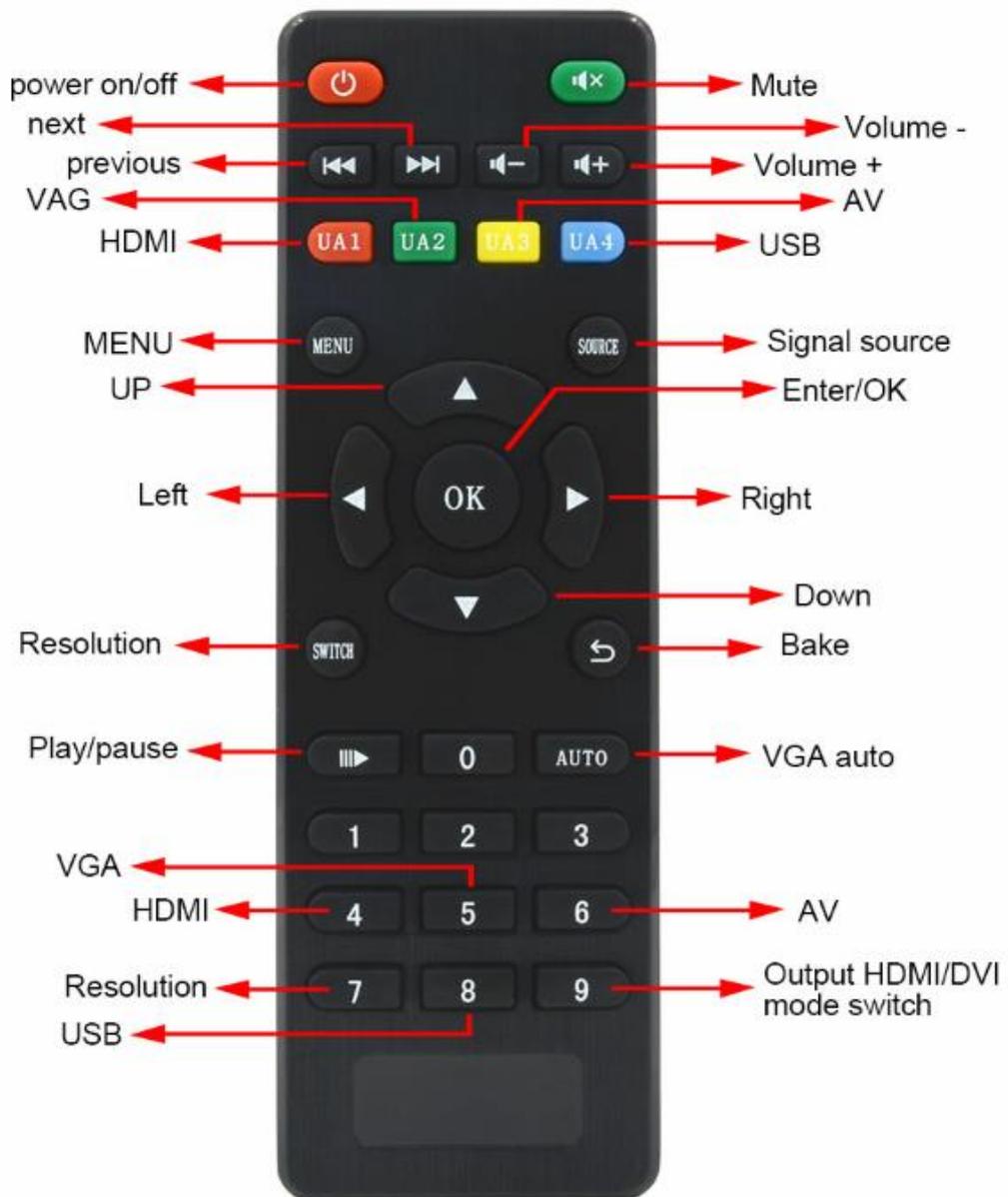
Chapter 5. Menu introduction

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:
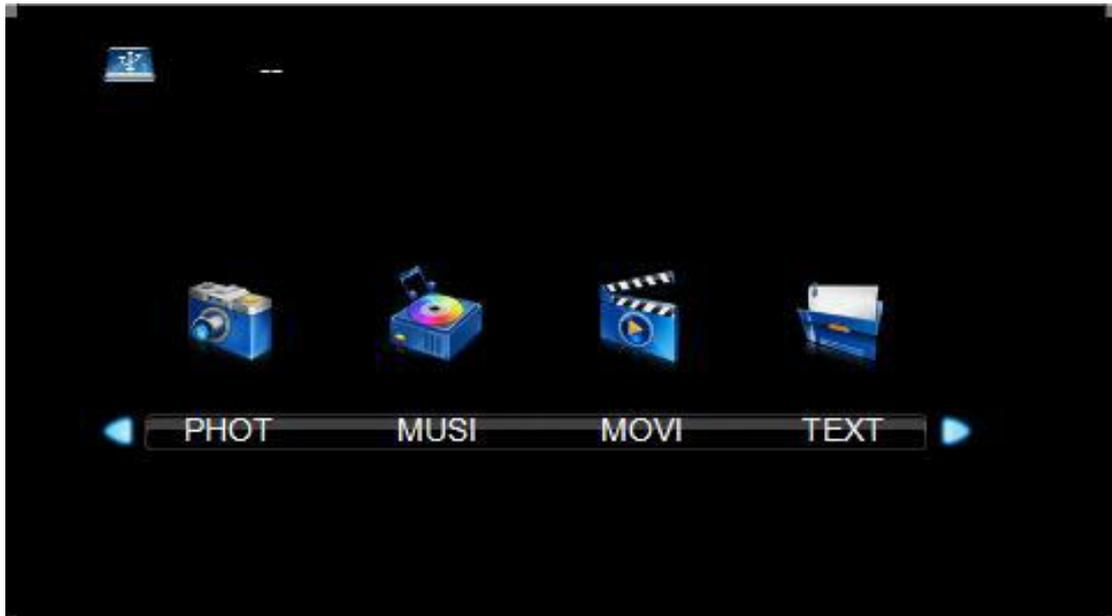
This representative has access to the U disk, and the machine can recognize the U disk correctly.
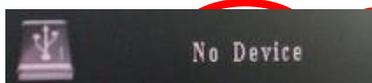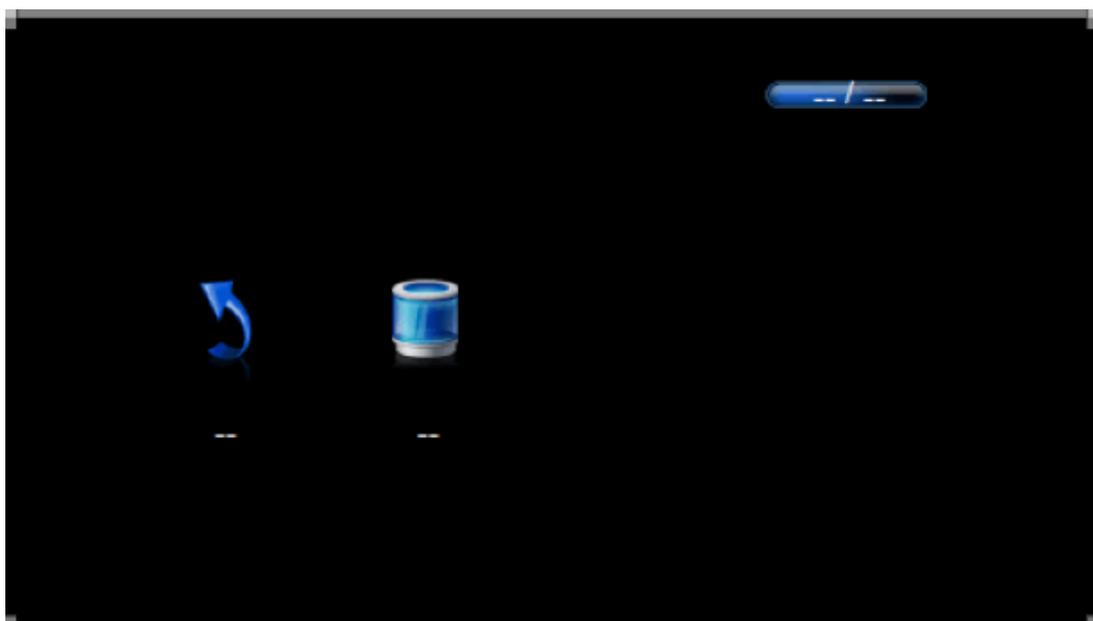
This machine does not have access to the U disk, or the machine can not recognize the U disk.

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

PHOT   MUSI   MOVI   TEXT

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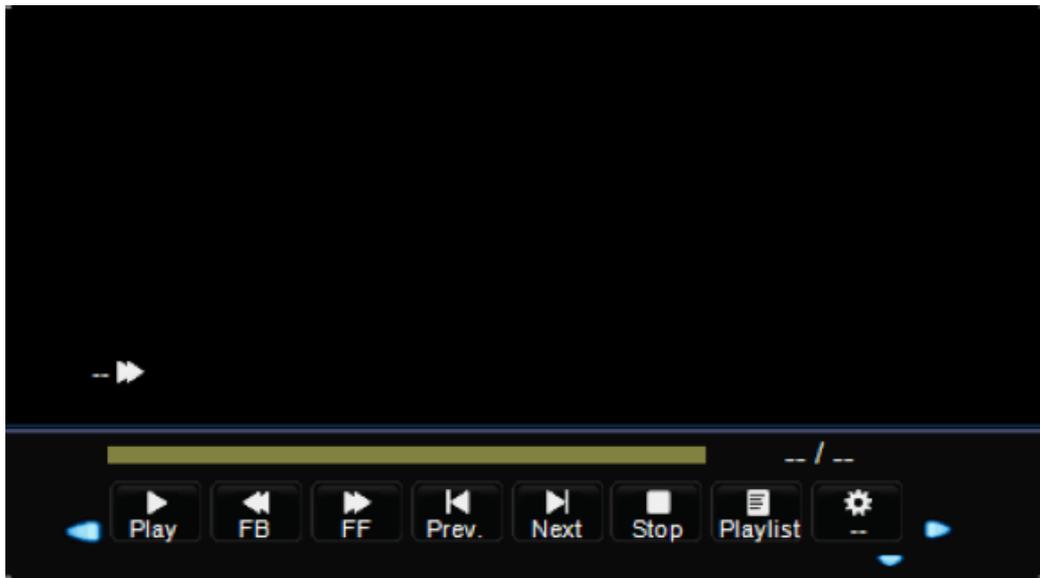next menu.

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^{0} Rotation: 0Xff, 0Xf7, 0x5a, 0x00, 0x01, 0x00, 0x51