FCC NOTICE (Class A)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Federal Communications Commission Statement

NOTE- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Class A ITE:

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:

Warning - This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

CE Class A (EMC)

This product is herewith confirmed to comply with the requirements set out in the Council Directives on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive 2004/108/EEC.

Warning - This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures to correct this interference.

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THE MARK OF CROSSED-OUT WHEELED BIN INDICATES THAT THIS PRODUCT MUST NOT BE DISPOSED OF WITH YOUR OTHER HOUSEHOLD WASTE. INSTEAD, YOU NEED TO DISPOSE OF THE WASTE EQUIPMENT BY HANDING IT OVER TO A DESIGNATED COLLECTION POINT FOR THE RECYCLING OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT. FOR MORE INFORMATION ABOUT WHERE TO DROP OFF YOUR WASTE EQUIPMENT FOR RECYCLING, PLEASE CONTACT YOUR HOUSEHOLD WASTE DISPOSAL SERVICE OR THE SHOP WHERE YOU PURCHASED THE PRODUCT.

AVerMedia

Remote Control Battery Safety Information

- Store batteries in any cool & dry place.
- Do not dispose used batteries in domestic waste. Dispose batteries at special collection points or return to stores if applies.
- Remove the batteries if they are not in use for long period of time. Battery leakage and corrosion can damage the remote control, dispose batteries safely.
- Do not mix and use old and new batteries.
- Do not mix and use different types of batteries: alkaline, standard (carbon-zinc) or rechargeable (nickel-cadmium).
- Do not dispose batteries in a fire.
- Do not attempt to short circuit the battery terminals.

Remote Control Class 2 Laser Product

LASER RADIATION
DO NOT STARE INTO THE BEAM
CLASS 2 LASER PRODUCT

AVerMedia

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Introduction

Thank you for purchasing the AVerMedia® AVerVision SPB350. This document camera displays documents, negatives, transparencies and 3D objects onto a TV, LCD or DLP projector making demonstrations a snap.

The advanced features of the AVerVision SPB350 make it a versatile and multi-functional product. Integrated with the new powerful zoom feature, AVEROPTICAL Zoom is a combination of optical zoom with AVERZOOM. AVERZOOM is an AVerMedia patented technology which digitally zooms in and pans on an image while maintaining optical zoom image quality. You can save still images in the built-in memory, or SD memory card. When connected to a computer via USB connection and with the bundled software, you can capture and save still images and video clips to your hard drive directly. It also comes with a fully-featured remote control.

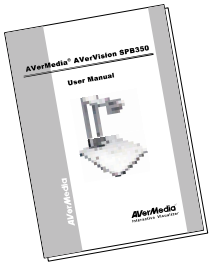
AVerMedia

Package Contents

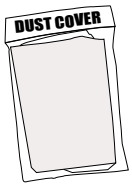
Your AVerMedia® AVerVision SPB350 package contains the following:

AVerMedia® AVerVision SPB350

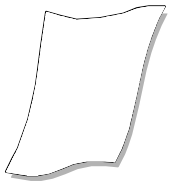
Remote Control
(batteries included)



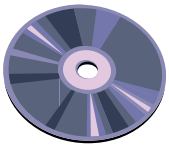
User Manual



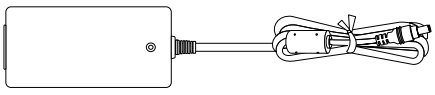
Dust Cover



Anti-glare Sheet



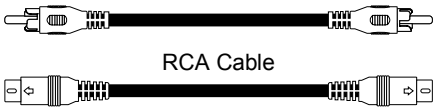
Installation CD



Power Adapter

Power Cord

* The power cord varies depending on the standard power outlet of the country where it is sold.



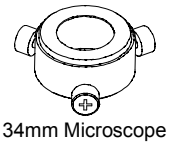
RCA Cable

S-Video Cable

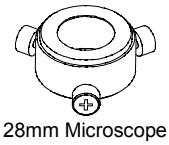
RGB Cable

USB Cable

Optional Accessories



34mm Microscope Adapter

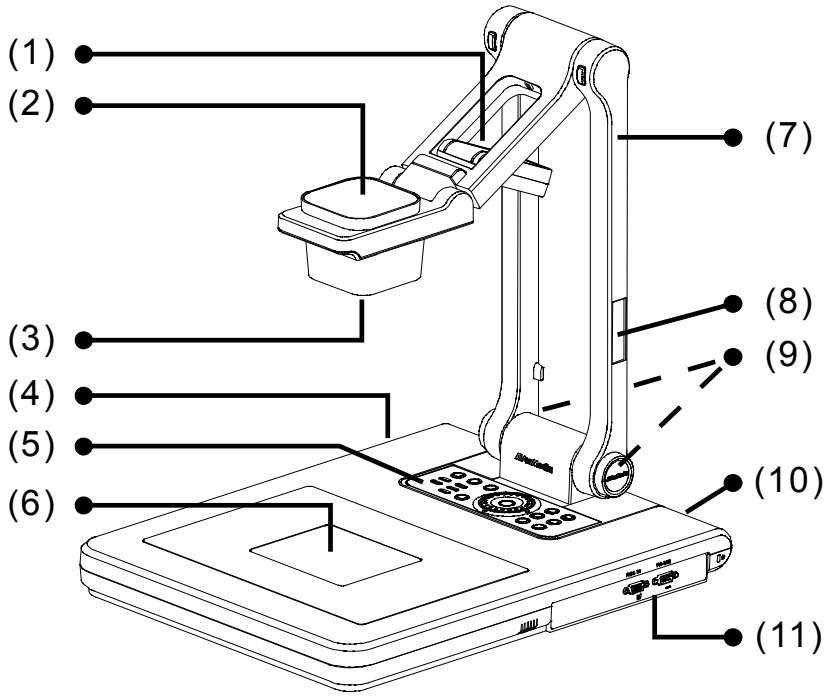


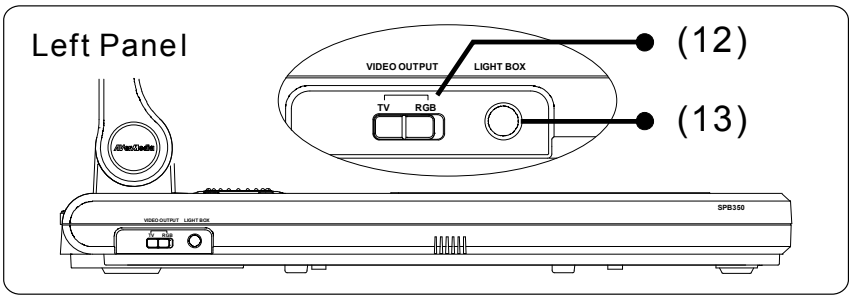
28mm Microscope Adapter

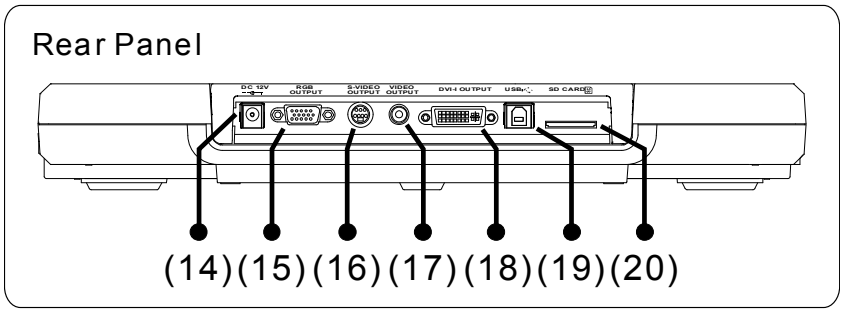
AVerMedia® AVerVision SPB350 Parts

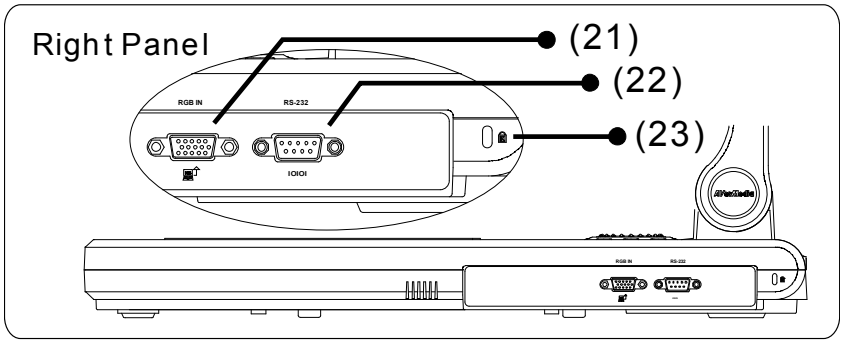
The illustrations below identify the parts of SPB350.

1. Overhead light
2. Camera head
3. Camera lens
4. Left panel
5. Control panel
6. Light box
7. Arm
8. Label slot
9. IR sensors
10. Rear panel
11. Right panel
12. Video output switch
13. Light box power button
14. DC 12V port
15. RGB output port
16. S-Video output port
17. Video output port (RCA/Composite)
18. DVI-I output port
19. USB port
20. SD card slot
21. RGB IN port
22. RS-232 port
23. Antitheft slot





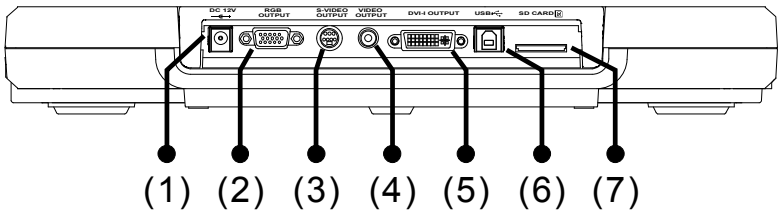




Making the Connections

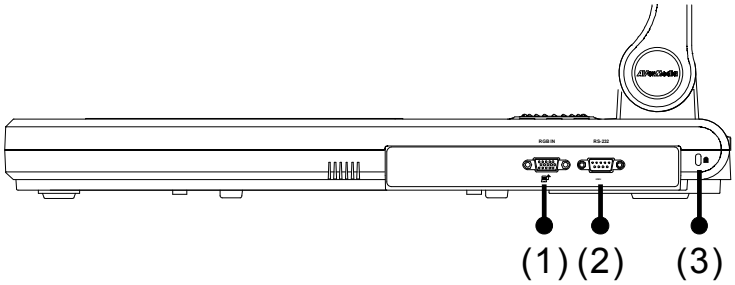
The ports on the rear and right panel of SPB350 enable you to connect the unit to a computer, graphics display monitor or LCD/DLP projector, TV or other device. Illustrated below are the ports that are located at the rear and right panel of SPB350 with their corresponding labels.

Rear Panel



Name		Function
(1) DC 12V port	:	Connect the power adapter into this port.
(2) RGB output port	:	Output the signal from the camera, RGB IN port, or the captured images from the memory source on a VGA/Mac monitor or LCD/DLP projector.
(3) S-Video output port	:	Output the signal from the camera or the captured images from the memory source on TV or Video equipment.
(4) Video output port (RCA/Composite)	:	Output the signal from the camera or the captured images from the memory source on TV or Video equipment.
(5) DVI-I output port	:	Output the signal from the camera, RGB IN port, or the captured images from the memory source on a VGA/Mac monitor or LCD/DLP projector with DVI-I interface. If the display device does not support DVI-I, it can only display the signal from the camera and the captured images.
(6) USB port	:	Use SPB350 as a USB Camera or Mass Storage to transfer the captured images from SPB350 memory source to PC.
(7) SD card slot	:	Insert the SD card with the label facing up. It can support 16MB~2GB card capacity and only accepts FAT16 formatted card.

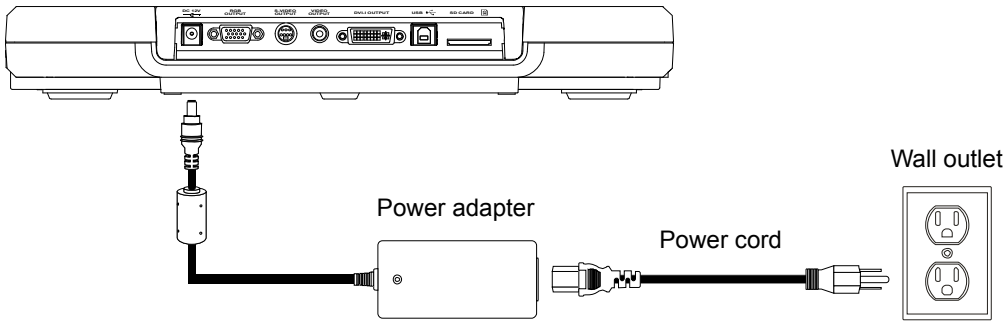
Right Panel



Name		Function
(1) RGB IN port	:	Takes as input the signal from a computer or other sources and pass it through to the RGB Output and DVI-I port only. Connect this port to the VGA output port of the computer.
(2) RS-232 port	:	Receive command from the computer to operate SPB350. Connect this port to the RS-232 port of the computer.
(3) Antitheft slot	:	Attach a Kensington compatible security lock or antitheft device.

Connecting the Power Adapter

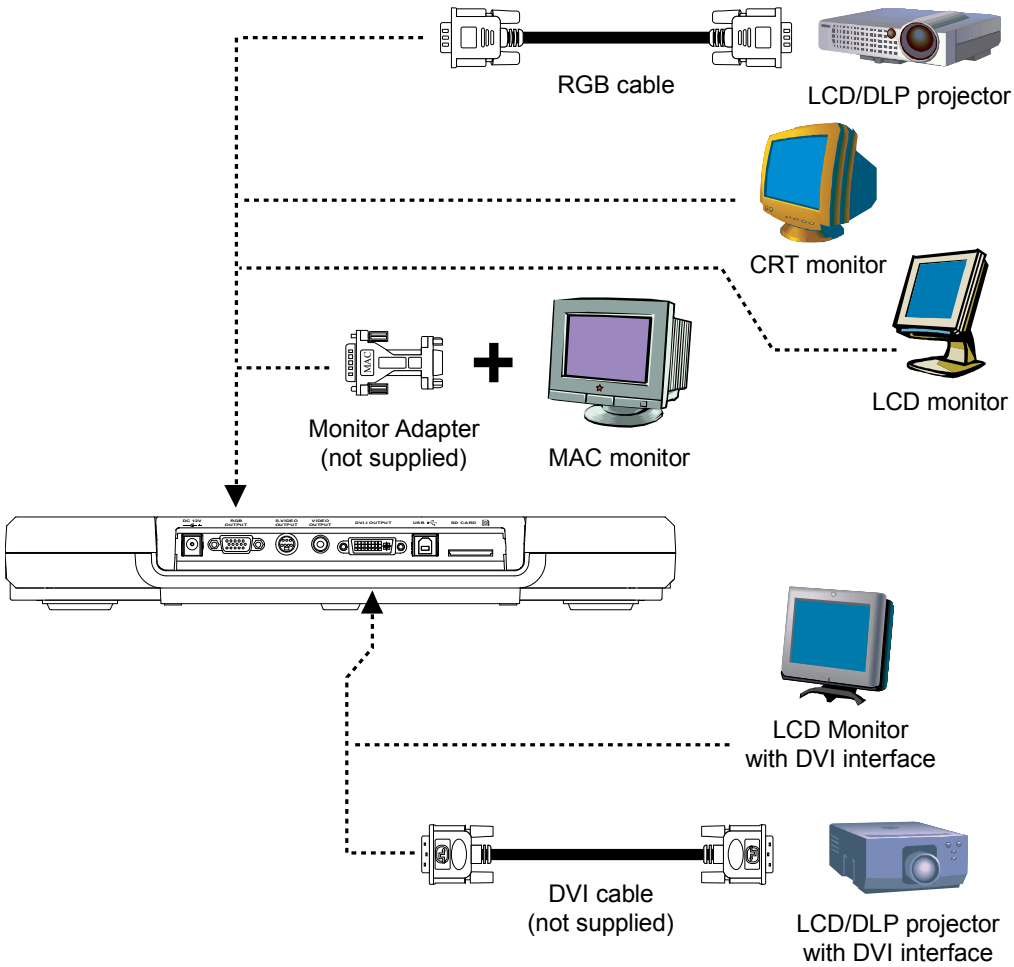
Connect the power adapter to a standard 100V~240V AC power source.



Connecting a VGA, Mac Display Monitor or LCD/DLP Projector

Locate the RGB (VGA) or DVI-I input port of the display device and connect it to RGB/DVI-I OUTPUT port of SPB350.

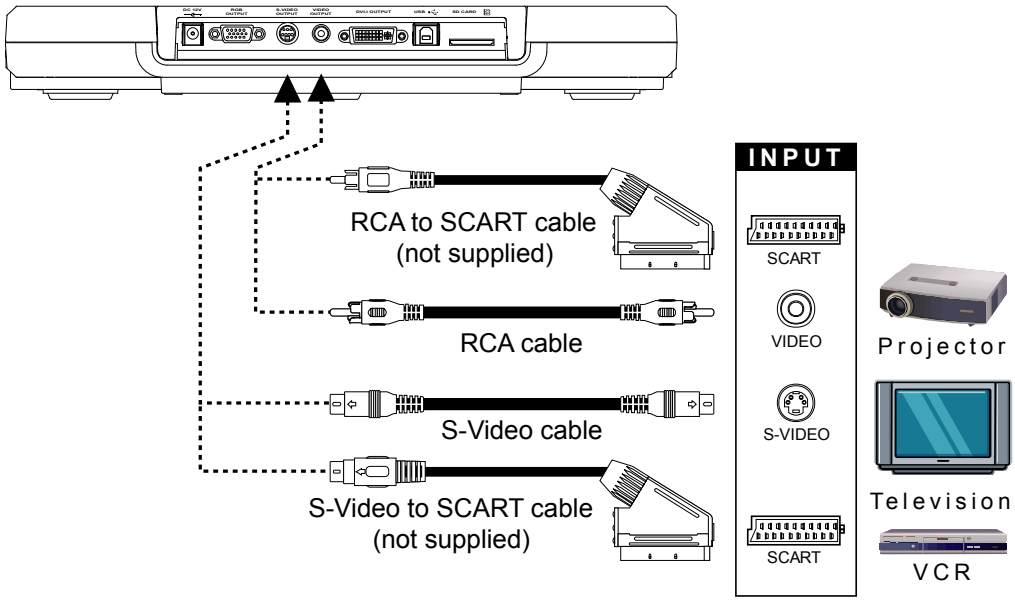
Make sure the Video Output switch is set to RGB.



Connecting a TV

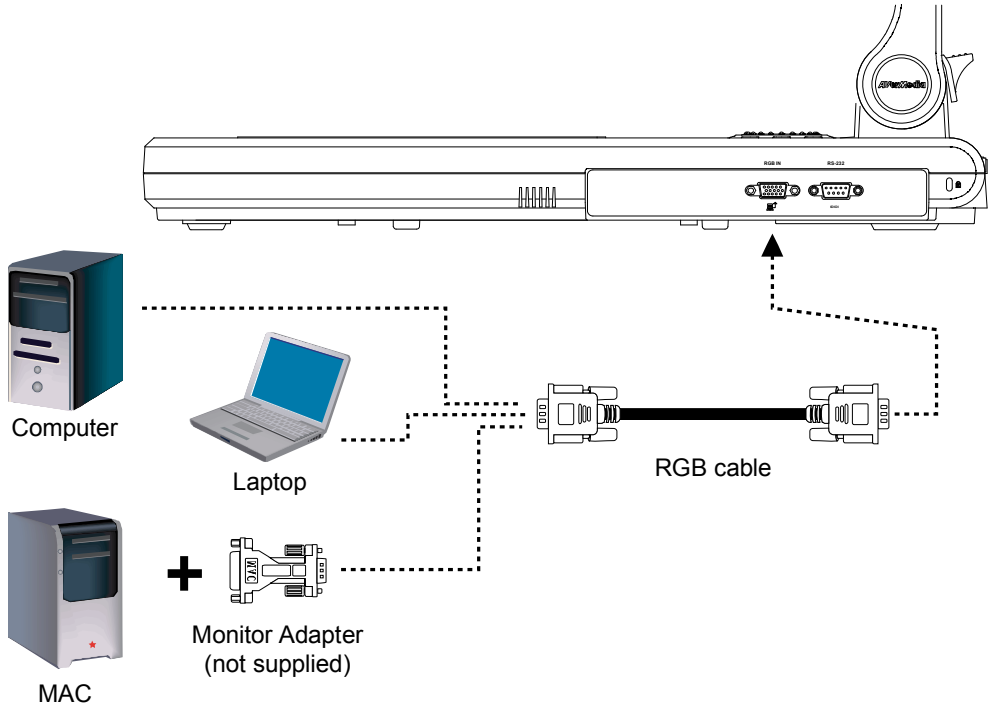
Locate the VIDEO (yellow), S-VIDEO or SCART RGB input port of the TV or Video equipment (i.e., VCR) to record your presentation on a videotape and connect it to S-VIDEO or VIDEO OUTPUT port of SPB350.

- Make sure the Video Output switch is set to TV.
- For better video quality, we strongly suggest using S-VIDEO connection.



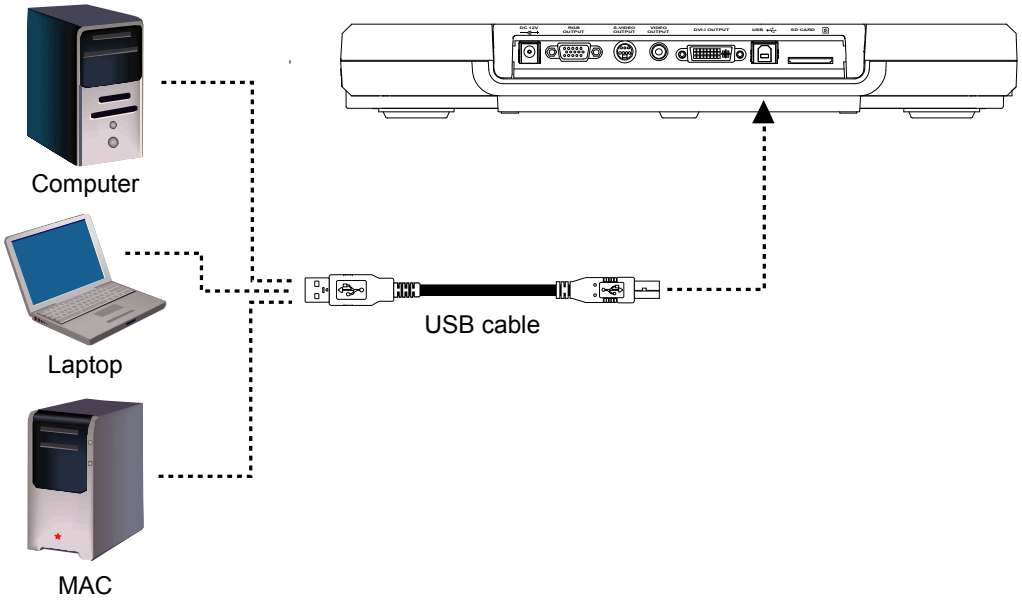
Connecting a Computer

Locate the RGB (VGA) output port of the computer or laptop to display your PC presentation on screen and connect it to RGB IN port of SPB350. The video signal from the RGB INPUT port is streamed to RGB and DVI-I OUTPUT ports only, and displayed on the screen even in stand-by mode. Press SOURCE button on the control panel or remote to switch to PC mode.



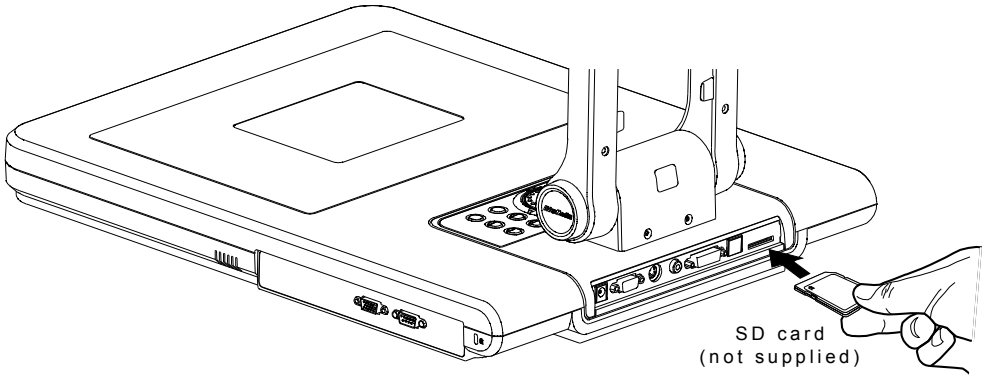
Connecting to a Computer via USB Connection

Locate the USB port of the computer or laptop and connect it to USB port of SPB350. This enables you to use SPB350 as a USB Camera and to transfer the captured images from the memory source and to computer. Also see “Using AVerVision SPB350 as a Mass Storage”.



Inserting and Ejecting a SD Card

Insert the card with the label facing up until it reaches the end. To remove, pull the card out. The supported SD card capacity is from 16MB to 2GB. Make sure the card is formatted to FAT16. SPB350 automatically creates and stores the images in AVERJPG folder.

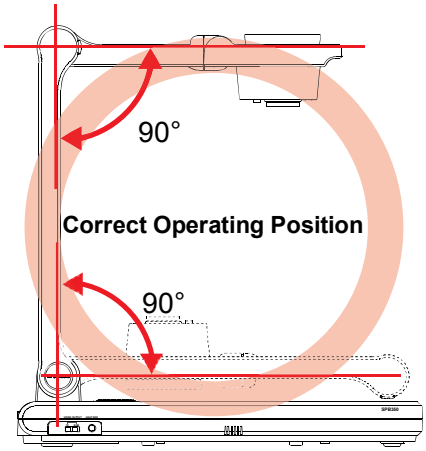


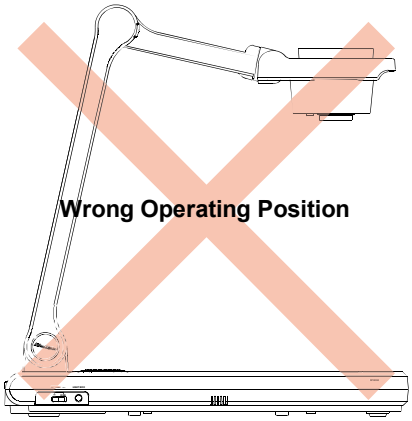
Setting Up SPB350

This section provides useful tips on how to adjust the SPB350 to meet your needs.

Arm

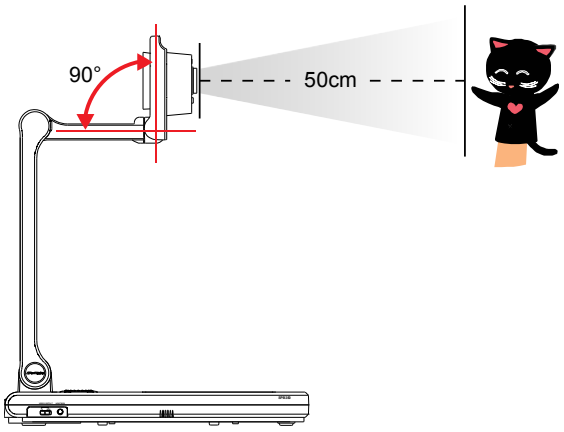
The arm must be unfolded fully in upright position.

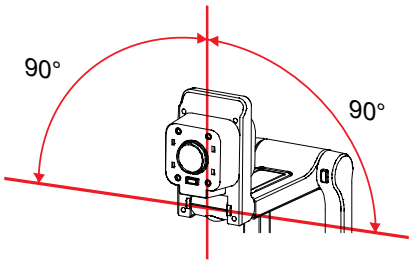




Camera Head

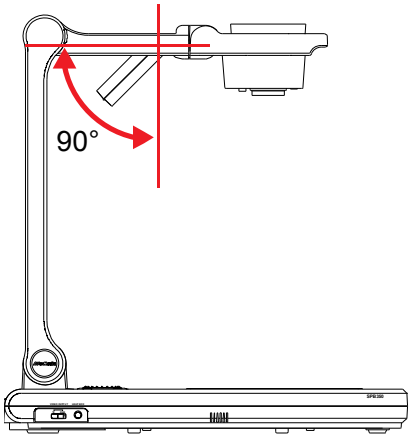
The camera head can be folded up 90° and turned 90° to the left and right. To display an object more than 50cm away from the camera, unscrew the close-up lens. Do not forget to screw back the close-up lens afterwards.





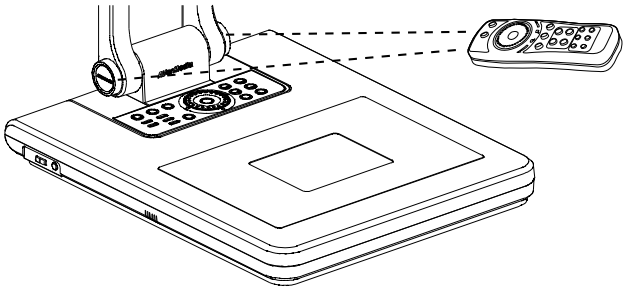
Overhead Light

Press LAMP button on the control panel to turn on and off light.



Infrared Sensor

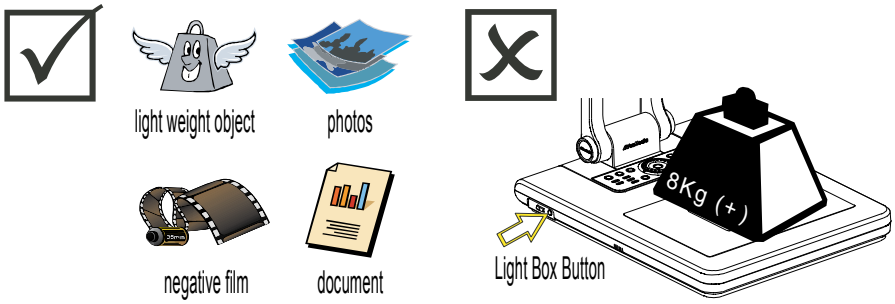
Aim the remote control at the infrared sensors to operate the unit.



Light Box

Press LIGHT BOX button on the left panel of SPB350 to turn on and off light. Use this to view negative film, x-ray and 35mm slides.

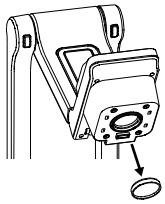
: **DO NOT** place an object weighing more than 8kg on top of the light box.



Microscope Connection

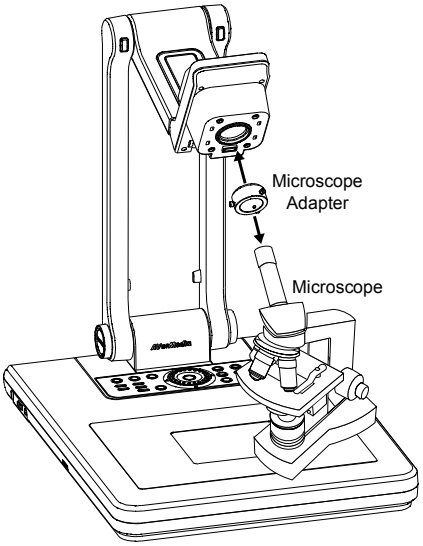
Connecting the SPB350 to a microscope enables you to examine microscopic objects on a big screen without straining your eyes.

1. Change the image display mode to Microscope. Press **MENU** > select **SETTINGS** > **MODE** > **MICROSCOPE** and press **ENTER**.
2. Adjust the microscope focus to its best clarity. Then, select the appropriate adapter size that would fit the microscope eyepiece.
3. Unscrew the close-up lens from the camera head.
4. Remove the microscope eyepiece from the microscope and connect it to the microscope adapter. Then, fasten the 3 bolts until the adaptor secures the eyepiece.



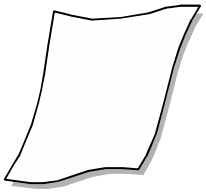
We suggest using a microscope with an eye relief of 15.5mm or higher for better view.

5. Screw the microscope adapter to the AVerVision camera head. Then, connect it to the microscope.



Anti-glare

The anti-glare sheet is a special coated film that helps eliminate any glare that may be encountered while displaying very shiny objects or glossy surfaces such as magazines and pictures. To use, simply place the anti-glare sheet on top of the shiny document to reduce reflected light.



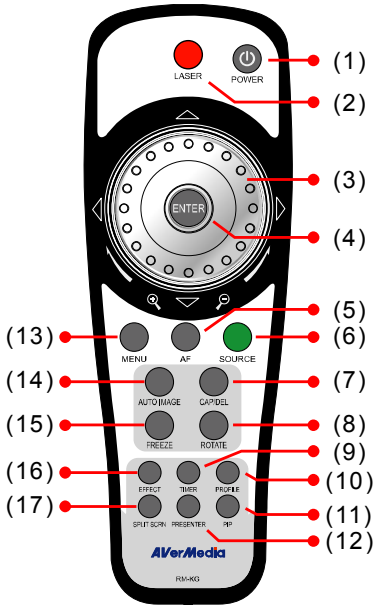
Control Panel Light Color

The LED power button on the control panel of SPB350 indicates the status of the unit.

Color	Description
Blue	: The unit is in operating mode.
Orange	: The unit is in standby mode.

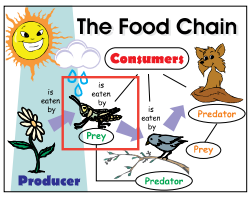
Using the Infrared Remote Control

Use the SPB350 Remote Control to enhance your presentation by having the ability to switch between three (3) presentation modes and access various features. To use the remote control, first insert the batteries (2 “AAA” size batteries are provided) into the battery compartment at the back of the remote. Use the figure and descriptions below as a reference for remote control functions.



Name	Function
(1) POWER	Turn the unit on/off.
(2) LASER	Turn on the laser pointer.
⚠	**DO NOT** look directly at the laser pointer and avoid aiming the laser at any surface that may reflect the beam (i.e., a mirror or mirrored surface).
(3) Shuttle Wheel	- Turn the shuttle wheel clockwise to zoom in and counter-clockwise to zoom out the image optically and digitally in Camera and Playback mode only. When it exceeds the maximum optical zoom level of about 8X, you may still continue to AVEROPTICAL zoom up to 2.5X AVerZoom and 8X digitally zoom. Press ENTER to return to normal view (100%). The zoom bar indicator will turn from blue to aqua to indicate that you can pan around the image. - Press the shuttle wheel ▲,▼,◄, & ► to pan the image while in digital zoom mode, to make a selection on 16-thumbnail images or move to the next or previous single full screen preview in Playback mode, or to make a selection or adjustment on the OSD main-menu and sub-menu (See Menu Functions for more details).

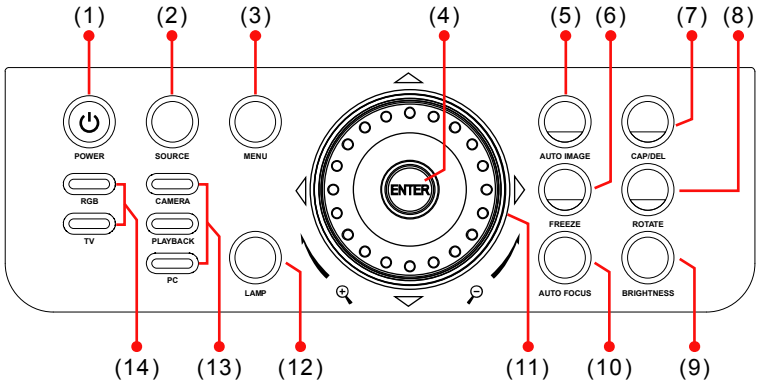
Name	Function
(4) ENTER	Make a selection in Playback mode and OSD menu. Use this to quick zoom to 200% or back to 100% in Camera mode only.
(5) AF (Auto Focus)	Adjust the focus automatically.

Name	Function
(6) Source	Switch between Camera, Playback and PC mode. To skip Playback and immediately switch to PC mode, press the SOURCE button twice consecutively. - Camera mode displays the video signal from the built-in camera. - Playback mode displays the captured image from the memory source in 16-thumbnail images. Use ▲,▼,◄, & ► buttons or rotate the shuttle wheel to make a selection and **ENTER** to display the selected image in full screen. Press **MENU** to display the Playback menu. Select **SLIDE SHOW** to start or set the time interval between frames in second, **MEMORY SOURCE** to select the image location between the built-in memory or SD card, and **DELETE** to permanently remove the selected image from the selected memory source. - PC mode displays the video signal from the RGB IN port of SPB350.
(7) CAP/DEL	- Capture a still image in Camera mode. The captured image is saved in the selected memory source at 1600 x 1200 resolution and the built-in memory can store up to 80 images. - Remove the selected picture from the selected memory source permanently in Playback mode.
(8) ROTATE	Turn the image by 90°in Camera mode and 180 in full screen Playback mode.
(9) TIMER	Display the OSD timer menu and use ▲or▼ buttons to select **SET TIME** to set the time value, **START** to begin the countdown timer, **PAUSE/RESUME** to temporarily halt or continue, and **STOP** to end. Press **MENU** to hide the timer menu.
(10) PROFILE	Recall and switch from the 3 saved user setting profile selections (See MENU Functions – SAVE for more details).
(11) PIP	Display/hide a thumbnail of the captured image from the memory source at the corner of the screen while in Camera mode. Use ◄ or ► buttons to move to the previous or next image and **ENTER** to display the image in full screen. To move the mini playback screen to different corners, press **MENU**, go to **PIP** and select the position of the mini playback screen.
(12) PRESENTER	Select to turn on/off AVerBox or AVerVisor. Only one feature can be used at a time. AVerBox overlays a frame on the presentation screen. Selecting **SHADE** changes the opacity of the area outside the box from 0%, 50% and 100%, **COLOR** to change the frame color from red, green and blue, and **RESIZE** to change the size of the frame. To resize or move the frame around the presentation screen, press the shuttle wheel ▲,▼,◄, & ►.  AVerVisor covers part of the presentation screen. The upper part of the presentation screen is slightly exposed when it is being called each time. To expose part of the covered area, press the shuttle wheel ▲,▼,◄, &►. Select **SHADE** to change the darkness of the shaded area between 50% or 100%.
(13) MENU	Pull up and exit the OSD main-menu and sub-menu.

Name	Function
(14) AUTO IMAGE	Automatically adjust and set the white balance and exposure setting.
(15) FREEZE	Toggle to pause or resume the camera.
(16) EFFECT	Convert and display the image in BW, Negative or Color in Camera and Playback mode only.
(17) SPLIT SCRN	Turn on/off split screen mode. Split Screen divides the screen into two parts. One side displays the live image from the SPB350 camera and the other side displays the captured images from the memory source in 8-thumbnail preview. Use the ▲,▼,◄, &► buttons to make a selection and **ENTER** to enlarge the selected image in split screen mode. To horizontally or vertically pan the enlarged image, use the ◄ & ► or ▲&▼ buttons. To switch to different split screen type, press **MENU**, go to **SPLIT SCREEN** and select between vertical or horizontal splitting type.

Touch Button Control Panel

The touch button control panel located on the top side of AVerVision SPB350 provides quick access to commonly used functions.



Name	Function
(1) POWER	Turn the unit on/off.
(2) SOURCE	Switch between Camera, Playback and PC mode. To skip Playback and immediately switch to PC mode, press the SOURCE button twice consecutively. - Camera mode displays the video signal from the built-in camera. - Playback mode displays the captured image from the memory source in 16-thumbnail images. Use ▲,▼,◄, & ► buttons or rotate the shuttle wheel to make a selection and **ENTER** to display the selected image in full screen. Press **MENU** to display the Playback menu. Select **SLIDE SHOW** to start or set the time interval between frames in second, **MEMORY SOURCE** to select the image location between the built-in memory or SD card, and **DELETE** to permanently remove the selected image from the selected memory source. - PC mode displays the video signal from the RGB IN port of SPB350.
(3) MENU	Pull up and exit the OSD main-menu and sub-menu.
(4) ENTER	Make a selection in Playback mode and OSD menu. Use this to quick zoom to 200% or back to 100% in Camera mode only.
(5) AUTO IMAGE	Automatically adjust and set the white balance and exposure setting.
(6) FREEZE	Toggle to pause or resume the camera.

Name	Function
(7) CAP/DEL	- Capture a still image in Camera mode. The captured image is saved in the selected memory source at 1600 x 1200 resolution and the built-in memory can store up to 80 images. - Remove the selected picture from the selected memory source permanently in Playback mode.
(8) ROTATE	Turn the image by 90°in Camera mode and 180 in full screen Playback mode.
(9) BRIGHTNESS	Adjust the brightness level in Camera mode to improve the visibility.
(10) AUTO FOCUS	Adjust the focus automatically.
(11) SHUTTLE WHEEL	- Turn the shuttle wheel clockwise to zoom in and counter-clockwise to zoom out the image optically and digitally in Camera and Playback mode only. When it exceeds the maximum optical zoom level of about 8X, you may still continue to AVEROPTICAL zoom up to 2.5X AVerZoom and 8X digitally zoom. Press ENTER to return to normal view (100%). The zoom bar indicator will turn from blue to aqua to indicate that you can pan around the image. - Press the shuttle wheel ▲,▼,◄, & ► to pan the image while in digital zoom mode, to make a selection on 16-thumbnail images or move to the next or previous single full screen preview in Playback mode, or to make a selection or adjustment on the OSD main-menu and sub-menu (See Menu Functions for more details).
(12) LAMP	Turn the overhead light on/off.
(13) Source LED Indicator	Indicate the selected Source mode either in Camera, Playback or PC.
(14) Video Output LED Indicator	Indicate the setting of the Video Output switch to which the video signal is being sent out.

Using AVerVision SPB350 as a Mass Storage

This enables you to transfer the captured image to and from the memory source and PC.

You **MUST** read and follow the instructions below **BEFORE** connecting the USB cable.

Every time when using the SPB350 as Mass Storage, the following **MUST** be done:

1. Select the memory source.

   To select the memory source, press **MENU** > select **SETTING** > **MEMORY** > **SOURCE** > **EMBEDDED** or **SD** and press **ENTER**; then press **MENU** to exit.

2. **MUST** set the USB CONNECTION as MASS STORAGE.

   To set the USB connection type, press **MENU** > select **SETTING** > **USB CONNECTION** > **MASS STORAGE** and press **ENTER**; then press **MENU** to exit.

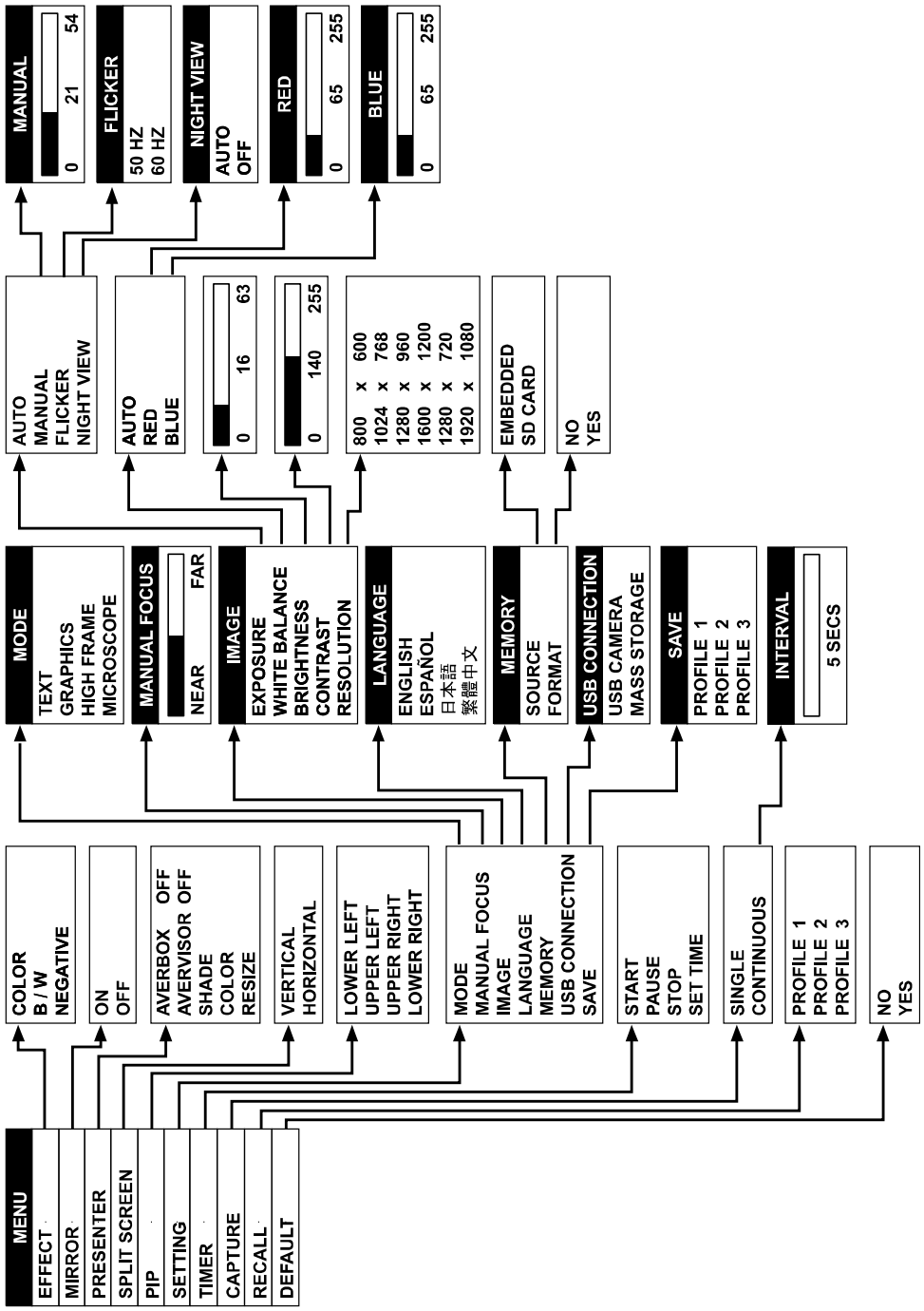
3. When “MASS STORAGE” appears at the lower left corner of the presentation screen, you may now connect the USB cable (See “Connecting a Computer via USB Connection” for illustration).

4. Upon connecting the USB cable, the system automatically detects the new removable disk.
5. In the Removable Disk dialog box, select **Open folder to view files** and then click **OK**. You may now transfer the file to and from your PC hard disk.

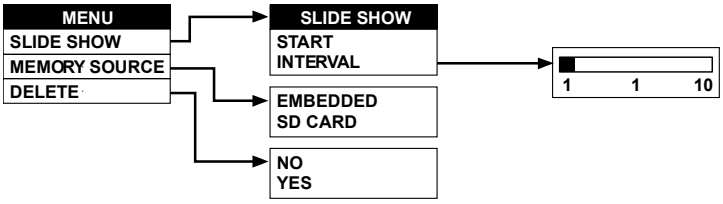
OSD Navigation Tree

VIDEO OUTPUT OSD

For TV output, RESOLUTION is not included in the menu list.

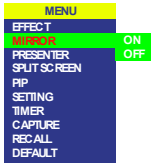
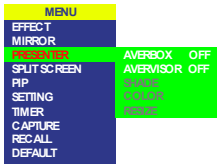
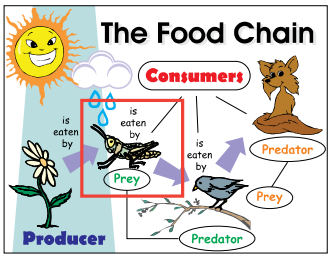
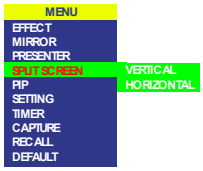


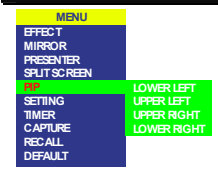
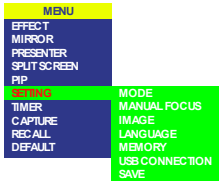
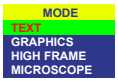
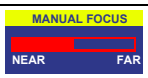
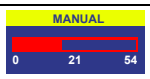
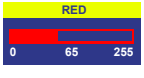
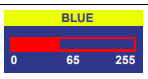
PLAYBACK OSD

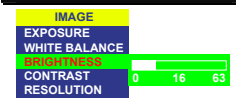
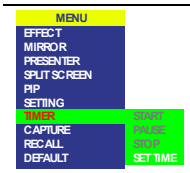
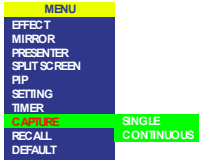
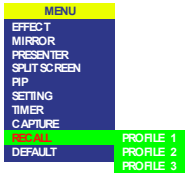


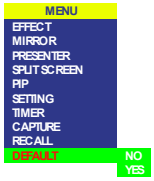
Menu Functions

The MENU functions of SPB350 enhance fine-tuning your screen display, set the timer, select OSD language and more. Press the **MENU** button to call up and exit from the main menu or sub-menu display. Then use ▲or▼ buttons to select the items in the menu list. Use ►/**ENTER** button to enter sub-menu and ◄/ **ENTER** to return to main menu. To adjust the setting, press ◄or► buttons. To make a selection, press **ENTER**.

OSD Menu	Description
	EFFECT Press ► and use ▲or▼ buttons to select and display the image in Camera mode into positive (true color), monochrome (black and white) or negative. Then press ►/**ENTER** to make a selection.
	**MIRROR** Press ► and use ▲or▼ buttons to select turning on/off **MIRROR** to flip the image in Camera mode. Then press ►/**ENTER** to make a selection.
	**PRESENTER** Press ► and use ▲or▼ buttons to select and turn on either **AVERBOX** or **AVERVISOR**. Then press ►/**ENTER** to make a selection. Only one feature can be used at a time. AVerBox overlays a frame on the presentation screen. Selecting **SHADE** changes the opacity of the area outside the box from 0%, 50% and 100%, **COLOR** to change the frame color from red, green and blue, and **RESIZE** to change the size of the frame. To resize or move the frame around the presentation screen, press the shuttle wheel ▲,▼,◄, & ►.  AVerVisor covers part of the presentation screen. The upper part of the presentation screen is slightly exposed when it is being called each time. To expose part of the covered area, press the shuttle wheel ▲,▼,◄, & ►. Select **SHADE** to change the darkness of the shaded area between 50% or 100%.
	**SPLIT SCREEN** Press ► and use ▲or▼ buttons to select dividing the screen either vertically or horizontally. Then press ►/**ENTER** to make a selection. This function divides the screen into two parts. One side displays the live image from the SPB350 camera and the other side displays the captured images from the memory source in 8-thumbnail preview. Use the ▲,▼,◄, &► buttons to make a selection and **ENTER** to enlarge the selected image in split screen mode. To horizontally or vertically pan the enlarged image, use the ◄ & ► or ▲or▼ buttons.

OSD Menu	Description
	**PIP** Press ► and use ▲or▼ buttons to select the location of the mini playback screen. Then press ►/**ENTER** to make a selection. Display a thumbnail of the captured image from the memory source at the corner of the screen while in Camera mode. Use ◄ or ► buttons to move to the previous or next image and **ENTER** to display the image in full screen.
	**SETTING** Press ►, then use ▲or▼ buttons to select the items in **SETTING** list and press ►/**ENTER**.
	**SETTING > MODE** Use ▲or▼ buttons to select between Text, Graphics and High Frame enhancement mode and then **ENTER** to make a selection. ▪ Text - corrects the intensity of the adjacent pixel making it more uniform producing sharper and clearer images. ▪ Graphics - adjusts the gradient of the adjacent pixel making it appears to have a smooth image. ▪ High Frame - increases the frame rate capture and can visually tracks the motion and react quickly. Sufficient lighting is required when using this mode. ▪ Microscope - automatically fixes the optical zoom and displays the microscope image more clearly.
	**SETTING > MANUAL FOCUS** Use ◄or► buttons to manually adjust the focus and then press **ENTER** to save the setting and exit.
	SETTING > IMAGE > EXPOSURE Press ► and use ▲or▼ buttons to select between Auto, Manual, Flicker and Night View. Then press ►/**ENTER** to make a selection. Select **AUTO** to automatically adjust the camera exposure to determine how much light is required.
	**SETTING > IMAGE > EXPOSURE > MANUAL** Use ►or◄ buttons to manually adjust the exposure level then press **ENTER** to save the setting and exit.
	SETTING > IMAGE > EXPOSURE > FLICKER Use ▲or▼ buttons to select between 50Hz or 60Hz. Some display devices cannot handle high refresh rates. The image will flicker a couple of times as the output is switched to another refresh rate.
	SETTING > IMAGE > EXPOSURE > NIGHT VIEW Use ▲or▼ buttons to turn Night View **AUTO** or **OFF**. If you are presenting in a low-light condition, Night View enables the image of the object to appear as though under normal lighting conditions. SPB350 can automatically adjust the exposure to compensate for the adverse condition, but the captured image will appear to be in slow motion.
	SETTING > IMAGE WHITE BALANCE Press ► and use ▲or▼ buttons to select between auto or manually adjust the red and blue color to suit the lighting condition or color temperature. Then press ►/**ENTER** to make a selection.
	**SETTING > IMAGE > WHITE BALANCE > RED** Use ►or◄ buttons to manually adjust the red color level then press **ENTER** to save the setting and exit.
	**SETTING > IMAGE > WHITE BALANCE >BLUE** Use ►or◄ buttons to manually adjust the blue color level then press **ENTER** to save the setting and exit.

OSD Menu	Description
	**SETTING > IMAGE > BRIGHTNESS** Use ►or◄ buttons to increase or decrease the brightness level and improve the visibility of the image. The brightness level can be set up to 63.
	SETTING > IMAGE > CONTRAST Use ►or◄ buttons to emphasize or reduce the difference between light and dark conditions. The contrast level can be adjustable up to 255.
	SETTING > IMAGE > RESOLUTION Press ► and use ▲or▼ buttons to choose from different display resolutions then press ►/**ENTER** to make the selection. This selection will not be available in TV output (Composite/S-Video)
	SETTING > LANGUAGE Use ▲or▼ buttons to select from different languages then press ►/**ENTER** to make the selection.
 	SETTING > MEMORY Use ▲or▼ buttons to select either SOURCE or FORMAT. ▪ SOURCE – select the image storage in Camera mode or the source of the image to display in Playback mode either in the built-in memory or SD card. ▪ FORMAT – select **NO** to exit or **YES** to format and delete all the images saved in the memory source then press ►/**ENTER**. Please wait till the message “FORMAT” disappear to finish the process.
	SETTING > USB CONNECTION Use ▲or▼ buttons to select the USB function between USB Camera and Img Download. ▪ USB Camera - can be used as a computer webcam or with our bundled software as video recorder and capture still image. ▪ Img Download - transfer the captured images from the memory source to computer hard disk.
	SETTING > SAVE Use ▲or▼ buttons to select which user setting profile number to save your preferred setting. Only effect, mode, brightness and contrast settings can be saved.
	**TIMER** Press ► and use ▲or▼ buttons to select **SET TIME** to set the time value, **START** to begin the countdown timer, **PAUSE/RESUME** to temporarily halt or continue, and **STOP** to end.
 	**CAPTURE** Press ► and use ▲or▼ buttons to select **SINGLE** or **CONTINUOUS** capture mode. Then press ►/**ENTER** to make a selection. ▪ **SINGLE** saves one still image only ▪ **CONTINUOUS** saves successive still images until the memory source is full or when the **CAP/DEL** button is being press again to stop. Use ►or◄ buttons to increase or decrease the capture time interval between frames and then press **ENTER** to save the setting and exit. The time interval can be set from 5 to 600 sec.
	**RECALL** Press ►and use ▲or▼ buttons to select from the list to change to the preferred saved user setting profile number then press ►/**ENTER** to make the selection.

OSD Menu	Description
	**DEFAULT** Press ► and use ▲or▼ buttons to select **YES** to restore to original factory default setting or **NO** to exit then press ►/**ENTER** to make the selection.

Technical Specifications

Image

Sensor	1/2.5" CMOS color image sensor
Total Pixel Count	5 mega pixels
Frame Rate	30 fps (Max.)
White Balance	Auto / Manual
Exposure	Auto / Manual / Flicker / Night View
Theme	Text / Graphics / High Frame / Microscope
Effect	Color / BW / Negative
Analog RGB Output	SVGA, XGA, SXGA, UGA, HD720p, HD1080p
S-Video, Composite Video Output	NTSC or PAL
Image Capture	Up to 80 Frames
Built-In Memory	32MB NAND Flash Memory

Optics

Lens	F3.5 ; f=6~60 mm ; Auto Focus
Shooting Area	310mm x 233mm (Max.)
AVEROPTICAL Zoom	25.6x (8x optical + 3.2x AVERZOOM in SVGA) ; 20x (8x optical + 2.5x AVERZOOM in XGA) ; 16x (8x optical + 2x AVERZOOM in SXGA & HD720p) ; 12.8x (8x optical + 1.6x AVERZOOM in UGA) ; 10.6x (8x optical + 1.33x AVERZOOM in HD1080p)
Digital Zoom	Digital 8x

Power

Power Source	AC/DC100-240V, 50-60 Hz
Consumption	16 watts (lamp on); 13.6 watts (lamp off) 14.6 watts (light box on)

Lighting

Overhead light	LED Lamp
Base light	LED Lamp

Input/Output

RGB Input	15-Pins D-sub (VGA)
RGB Output	15-Pins D-sub (VGA)
DVI-I Output	DVI-I Type
S-Video Output	Mini-DIN Jack
Video Output	RCA Jack
USB	USB2.0
RS-232	9-Pins D-sub

Dimension

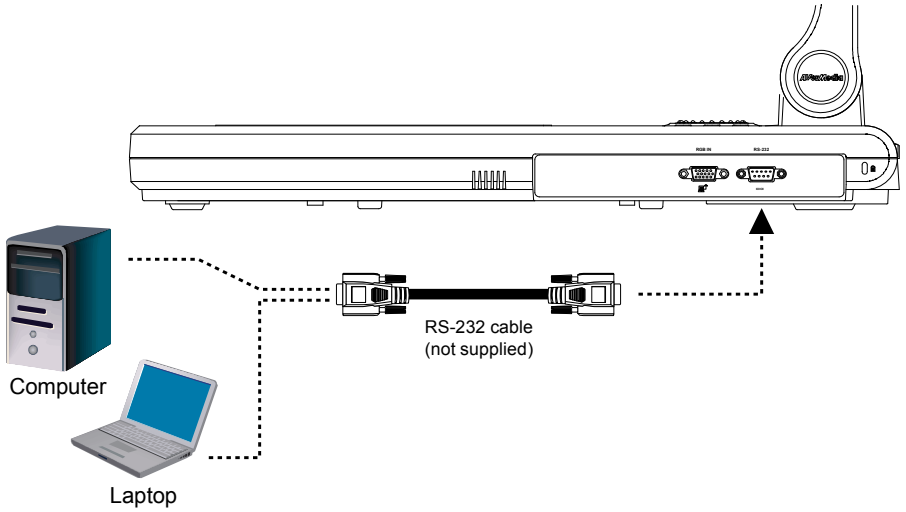
Fully Unfolded	480mm x 380mm x 505mm
Folded	480mm x 380mm x 150mm
Weight	7 kg (about 15.4 lb)

Card Supported

Secure Digital (SD)	16MB~2GB

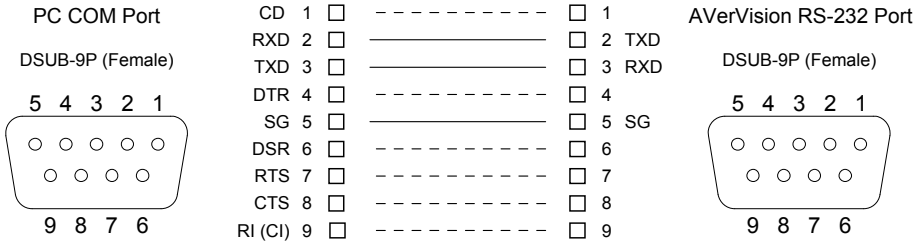
RS-232C Diagram Connection

SPB350 can be controlled using a PC through RS-232 connection.



RS-232C Cable Spec

Make sure the RS-232 cable matches the cable spec design.



RS-232C Transmission Spec

- Star bit : 1 bit
- Data bit : 8 bit
- Stop bit : 1 bit
- Parity bit : None
- X parameter : None
- Baud rate(Communication speed) : 9600bds

RS-232C Communication Format

Send Command Format

Send Format：0x52 + 0x05 + 0x01 + Command + 0x53 + CheckSum

Receive Format：0x53 + 0x00 + 0x01 + 0x05 + 0x53 + 0x57

FUNCTION	DATA CODE	CHECKSUM CODE
POWER ON	0x40	0x17
POWER OFF	0x41	0x16
POWER ON/OFF	0x01	0x56
MENU	0x07	0x50
UP	0x03	0x54
DOWN	0x04	0x53
LEFT	0x05	0x52
RIGHT	0x06	0x51
ENTER / FULLSCREEN	0x02	0x55
SOURCE	0x09	0x5E
CAMERA MODE	0x20	0x77

FUNCTION	DATA CODE	CHECKSUM CODE
PLAYBACK MODE	0x21	0x76
PC PASS THROUGH	0x22	0x75
LAMP ON/OFF	0x3C	0x6B
LIGHT BOX ON/OFF	0x3D	0x6A
AF	0x08	0x5F
NEAR	0x38	0x6F
FAR	0x39	0x6E
ZOOM IN	0x35	0x62
ZOOM OUT	0x34	0x63
ZOOM RESET	0x36	0x61
FREEZE	0x0C	0x5B
ROTATE	0x0D	0x5A
MIRROR	0x32	0x65
EFFECT	0x0E	0x59
BRT UP	0x2F	0x78
BRT DOWN	0x30	0x67
AUTO IMAGE	0x0A	0x5D
TIMER	0x0F	0x58
PROFILE	0x10	0x47
CAPTURE / DELETE	0x0B	0x5C
SPLIT SCRN	0x11	0x46
PIP	0x13	0x44
AVERBOX ON / OFF	0x26	0x71
AVERVISOR ON / OFF	0x27	0x70
AVERBOX COLOR	0x29	0x7E

Set Value Format

Send Format：0x52 + 0x0B + 0x03 + Data[0] + Data[1] + Data[2] + 0x53 + CheckSum

Receive Format：0x53 + 0x00 + 0x01 + 0x0B + 0x53 + 0x59

Function	Data[0]	Data[1]	Data[2]	CheckSum Code
Flicker 50Hz	0x00	0x00	0x00	0x5B
Flicker 60Hz	0x00	0x01	0x00	0x5A
Exposure Value	0x01	Value[0 ~ 95]	0x00	*1
WB Red Value	0x02	0x00	Value[0~255]	*1
WB Blue Value	0x02	0x01	Value[0~255]	*1
Brightness Value	0x03	Value[0 ~ 63]	0x00	*1
Contrast Value	0x04	Value[0 ~ 255]	0x00	*1
Rotate 0 degree	0x06	0x00	0x00	0x5D
Rotate 90 degree	0x06	0x01	0x00	0x5C
Rotate 180 degree	0x06	0x02	0x00	0x5F
Rotate 270 degree	0x06	0x03	0x00	0x5E
Effect Color	0x07	0x00	0x00	0x5C
Effect B/W	0x07	0x01	0x00	0x5D
Effect Negative	0x07	0x02	0x00	0x5E
Mode Text	0x08	0x00	0x00	0x53
Mode Graphics	0x08	0x01	0x00	0x52
Mode High Frame	0x08	0x02	0x00	0x51
Mode Microscope	0x08	0x03	0x00	0x50
OPTICAL ZOOM 1X	0x0A	0x00	0x00	0x51
OPTICAL ZOOM 8X	0x0A	0x01	0x00	0x50
SPLIT SCRN VERTICAL	0x0B	0x00	0x00	0x50
SPLIT SCRN HORIZONTAL	0x0B	0x01	0x00	0x51

Function	Data[0]	Data[1]	Data[2]	CheckSum Code
PIP LOWER LEFT	0x0C	0x00	0x00	0x57
PIP UPPER LEFT	0x0C	0x01	0x00	0x56
PIP UPPER RIGHT	0x0C	0x02	0x00	0x55
PIP LOWER RIGHT	0x0C	0x03	0x00	0x54
CAPTURE SINGLE	0x0D	0x00	0x00	0x56
CAPTURE CONTINUOUS	0x0D	0x01	0x00	0x57

*1 ：CheckSum = 0x0B xor 0x03 xor Data[0] xor Data[1] xor Data[2] xor 0x53

Get Value Format

Send Format :0x52 + 0x0A + 0x01 + Data[0] + 0x53 + CheckSum
Receive Format :0x53 + 0x0C + 0x01 + ReData[0] + 0x53 + ReCheckSum

Function	Data[0]	CheckSum Code	ReData[0]	ReCheckSum Code
Red Value	0x02	0x5A	Value[0~255]	*1
Blue Value	0x03	0x5B	Value[0~255]	*1
Power Status	0x04	0x5C	0 : OFF 1: ON	*1
Lamp Status	0x05	0x5D	0 : OFF 1: ON	*1
Display Status	0x06	0x5E	0: Camera Mode 1: Source Input 2: Playback Mode	*1
Video Output Status	0x07	0x5F	0: VGA 1: TV	*1
Freeze Status	0x08	0x50	0 : OFF 1: ON	*1
Brightness Value	0x0A	0x52	Value[0~63]	*1
Contrast Value	0x0B	0x53	Value[0~255]	*1
LIGHT BOX Status	0x0C	0x54	0 : OFF 1: ON	*1

*1 ：ReCheckSum = 0x0C xor 0x01 xor ReData[0] xor 0x52

Troubleshooting

This section provides useful tips describing how to solve common problems while using the AVerVision SPB350.

There is no picture on the presentation screen.

1. Check all the connectors again as illustrated in this manual.
2. Check the remote control's on/off switch on your display output device.
3. Verify the setting of the display output device.
4. If you are using a notebook or computer, you may have to switch the source to VGA.
5. Make sure the TV/RGB switch is properly set based on your display output.

There is no computer signal on the presentation screen.

When you turn on the computer, it will auto-detect the type of monitor you have. During auto-detection, there won't be any display on your presentation screen. To avoid this problem, connect your computer and all the necessary cables to the AVerVision SPB350 first before you power on your computer.

Unable to capture and save still image or is not responding.

- The message "FULL" is displayed. It means the memory source has reached the maximum capacity. Just transfer the images to PC or format the memory source.
- The message "SD PROTECT" is displayed. It means the SD card is write protected. Just remove the SD card from the slot and unlock it.
- The Capture setting could be in Continuous mode and the time interval is very long. Press MENU > select Capture > Single or change the Continuous mode interval setting.

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