

# AEE



# MagiCam

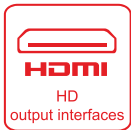
Magical application

## USER MANUAL

**SD22W**



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When using the SD22W video camera, adhere to the following precautions:

1. Do not drop, knock or shake the video camera.
2. Do not put the video camera close to an object that generates strong magnetic field, such as a magnet or a motor. Do not put the video camera close to an object that emits powerful radio waves, for example, an antenna. Strong magnetic field may cause faults on the video camera or damage the image / voice data.
3. Do not expose the video camera to high temperature or direct sunshine.
4. Do not put the memory card close to an object that generates strong magnetic field, such as a television set, a speaker, or a magnet. Do not put the memory card in a place where static electricity is easily generated.
5. Disconnect the power supply to stop recharging the battery immediately when over heat, smoke, or peculiar smell occurs during recharging.
6. Keep the video camera out of reach of children during recharging, because the power cable may cause asphyxia or electrical shock on children.
7. Store the video camera in a cool, dry, and dust-free place.

## Preface

Thank you for purchasing AEE SD22W series compact high-definition (HD) digital video camera, which has the following characteristics:

- Ultra small size and integrated structure
- User-friendly interfaces
- Easy operations
- Hand-free shooting to facilitate shooting of real scenarios at any time and place
- Superior recording performance thanks to dynamic HD shooting technologies, providing you with exciting video shooting experience

This manual describes how to install and use the SD22W video camera. It also provides information about use, operations, installation precautions, and technical specifications of the SD22W video camera. Before using the SD22W video camera, read and understand this manual carefully and keep it properly for future use. Designed to meet the professional requirements, AEE SD22W video camera will serve you in a long term.



This product has been certified by certification bodies for compliance with related safety regulations and specifications issued by the federal communications commission (FCC) and council of Europe (CE).

## Overview

The SD22W video camera is a compact high-end HD digital camera intended for professional applications. It provides the following functions:

- Performs industry-leading HD digital shooting.
- Stores voice data.
- Displays images in real time.
- Performs video recording.
- Takes pictures.
- Displays time.
- Provides laser indication.
- Performs wireless remote control.
- Performs 10X digital zooming.
- Wi-Fi function and App application.
- Connects to an external special-purpose microphone.
- Performs USB 2.0 high-speed data transmission.
- Recharges the battery in USB mode.
- Accessories are available to facilitate shooting at any time and place. Multiple patents of invention and technology are integrated in the SD22W video camera.

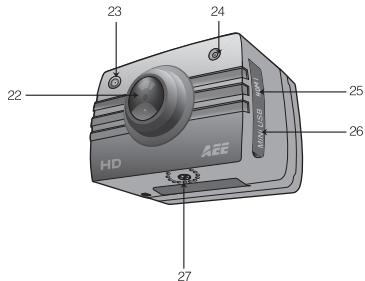
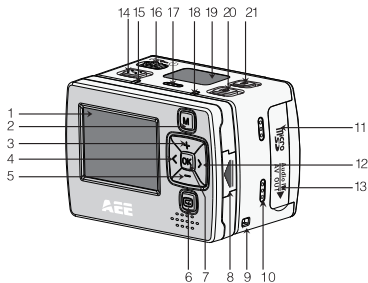
Dispose of properly. Recycle it for a greener earth!



The SD22W video camera has the following features:

- Provides 175° ultra-wide-angle f/3.0 lens.
- Provides a special-purpose HD lens, which supports 1080P, 1080i, 960P, and 720P HD video recording.
- Takes 8M pixels pictures in 3200x2400 resolution.
- Wi-Fi function and more App application .
- Performs 10X digital zooming.
- Performs shooting in multiple modes, such as single-key, automatically continuous capturing, self-time capturing etc.
- Provides unique fast-shot feature, up to 10 photos per second.
- Provides an independent voice recording function for long-time voice recording.
- Provides a built-in vehicle black box for real-time video recording during driving.
- Provides the remote control function.
- Provides the 180° photo rollover function.
- Connects to an external TFT screen to view the video recording and playback.
- Provides better video effects in multiple video output modes (NTSC system):
  - 1080P (1920x1080P) 30 frames / second
  - 1080i (1920x1080i) 60 frames / second
  - 960P (1280x960P) 30 frames / second
  - 720P (1280x720P) 60 frames / second
  - 720P (1280x720P) 30 frames / second
  - 480P (848x480P) 120 frames / second
  - 480P (848x480P) 60 frames / second
- Detects power level of the battery and free capacity of the memory card.
- Supports external T-flash (TF) cards for storage, up to 64 GB capacity.
- Performs dynamic high-speed video recording, with light and shade environment transient response.
- Detects light in three modes to meet exposure requirements in different scenarios.
- Provides night shooting mode with contrast and ISO enhancements, improving the clearness and sharpness of night scenarios.
- Provides compact and fashionable design.

- Provides HDMI and AV output interfaces for easy connecting to HD monitor or TV set to view record files.
- Records video programs in MOV format to facilitate playback on a PC and uploading to video-sharing websites.
- Provide high color fidelity to present more clear and natural video pictures.
- A wireless remote controller can remotely control the SD22W video camera for video recording, stopping, and shooting. Provides a unique code pairing function to avoid interferences from other remote controllers.
- Supports playback, deleting files and other operations on the local video camera.
- Supports 4X, 8X, and 16X fast forwarding, fast rewinding, and playback.
- Supports RTC time settings and time overlapping.
- Supports USB 2.0.
- Provides a built-in microphone for high-quality recording.
- Supports connecting to an external microphone (special-purpose microphone only),
- Provides a 1/4-inch general-purpose interface to facilitate extension of accessories.
- Provides multiple types of sport accessories for sport recording.
- Provides shockproof features to withstand mild drop or knock.
- Provides an IP68 waterproof housing, withstanding a diving depth of 100 meters, and two-types of rear-cover designs.
- Provides automatic standby for power saving, and supports automatic saving of audio and video data.



1. TFT screen	2. Menu key	3. Upward key
4. Leftward key	5. Downward key	6. Playback key
7. OK key	8. TFT screen lock knob	9. Wrist strap hole
10. Buzzer	11. SD card slot	12. Rightward key
13. AV out/Audio in	14. Record key	15. Video/Audio indicator (Green)
16. Power switch	17. Microphone	18. Operating/Recharging indicator (Red)
19. LCD segment screen	20. Shutter key	21. Stop key
22. Lens	23. Video/Photo indicator (Green)	24. Laser indicator
25. HDMI output	26. USB output interface	27. Threaded interface

## 1. Installing the SD22W Video camera

The SD22W video camera can be hand-held or used with hand-free accessories. It can be installed at your desired place or, after being equipped with a waterproof housing, placed in water for shooting underwater sceneries.

How to install the SD22W video camera

### (1). Assemble the TFT screen onto the video camera



TFT screen

video camera

Assemble the TFT screen onto the video camera

### (2). Put the SD22W video camera into the waterproof housing



video camera

Waterproof housing

Put the video camera into the waterproof housing

Note:1. To remove the TFT screen, press the PUSH snap button and then remove it.

2. SD22W does not support the plug and play, please turn off the SD22W before installing the DW10/D51/the TFT screen etc.

## 2. Installing the Remote Controller





The SD22W video camera is equipped with an independent remote controller, which can be placed at different positions, depending on the accessories.

1. Velcro	2. Back clip	3. Binding strap (optional)


Before using the SD22W video camera, complete the following preparations:

① Power on the SD22W video camera and check the power level



Turn the power switch to the "ON" position to initiate the system. After the red indicator is on, the corresponding symbols on the LCD screen turns on and then the system enters the preview state. On the LCD segment screen, you can find the following information:

- A "  " Recording mode: The current recording mode is displayed on the LCD segmen screen. The icon indicates the video mode, whereas the icon "  " indicates audio mode.
- B Photo mode: The "  " (shooting) icon is displayed on the screen.
- C Power symbol: The "  " (power supply) icon is displayed in the upper-right corner. When the system is working, this icon is constantly on. If this icon disappears, it indicates the SD22W video camera is in power-off or standby state.
- D Video recording duration: In the medium row of the LCD segmen screen displays the duration of the current recording video, for example, "005:20". In the preview state, press the "Video" key once to display the duration of the video recording, and press the "Stop" key once to hide the duration.


Note: The duration for video recording on the LCD segment screen is synchronously displayed with that on the TFT screen.



- E **Battery capacity indication:** The "  " (battery capacity) icon is displayed in the bottom-left corner. This icon indicates the battery level when the video camera is powered on. The more bars the power indicator has, the more power the battery has.


Note: When the video camera is in the standby or power-off state, the power icon is not displayed.

- F **USB connection mode:** The "  " (USB mode) icon indicates whether the video camera has been connected to a computer. When the video camera is powered on and connected to a computer, this icon is lit with the green indicator on the left side blinking slowly. When the video camera is not connected to a computer, this icon is not displayed.
- G **TF card capacity indication:** The "  " (TF card capacity) icon is displayed in the bottom-right corner, indicating the available space of the TF card. The more bars the power indicator has, the more free space you have. If the TF card is full, the green indicator on the left side is constantly on.

At this time, on the TFT screen, you can find the following information:

- A Working mode: The "  " (Video recording) symbol is displayed in the upper-left corner, indicating that the video camera is ready for video recording.

- B Battery capacity: The "" (battery power) symbol is displayed in the upper-left corner, indicating the battery level.
- C Video resolution: The resolution icon in the bottom-left corner indicates the current video recording resolution.
- D Available storage capacity: If a memory card is available upon power-on of the video camera, the "" (free space of the memory card) icon is displayed in the bottom-right corner.
- E There is no response for "<" and ">" keys in the preview state.
- F When using the supplied power supply or USB cable to recharge the battery in power off, the "Working/recharging red indicator" on the top of the video camera blinks slowly. The red indicator will be constantly on upon full recharging. The recharging time lasts for about three hours.

Note: Before using the video camera, check whether the battery has sufficient power. If the power level is low, use the power adapter supplied with the video camera or USB cable to recharge the battery. The "Working/recharging red indicator" blinks slowly during the recharging. Upon full recharging, the red indicator is constantly on, and the "" (battery power) symbol is displayed on the TFT screen.


## ② Formatting the Micro SD card

The Micro SD card must be a high-speed card. Before video/audio recording and shooting pictures, format the Micro SD card on the SD22W video camera. If a Micro SD card has been used on other devices, it should also be formatted on the SD22W video camera for normal use.

Note: Before formatting, make sure the files in the Micro SD card are not needed. Even the locked files on the video camera can be removed in formatting.

## ③ Setting the data and time

To set the date and time, perform the following operations:

- In the preview mode under power-on state, press the "**M**" key to display the menu interface.
- Press ">" to enter the "" system setup interface.
- Press "+" or "-" to display the "**Date / Time**" menu.
- Press "**OK**" to display the "**Date / Time**" interface shown as follows:

The digits under the cursor will turn blue and adjustable.

- Press “+” or “-” to adjust the date or time.
- Press “OK” after adjusting the date or time.
- Press the “M” key to exit the interface.



## Parameter Settings

To set parameters, perform the following operations:

- In the preview mode under power-on state, press the “M” key to display the menu interface.
- Press the “<” or “>” key to choose a left or right option from the menu interface.
- Press the “+” or “-” key to choose an upper or lower option from the menu interface.
- After selecting an option, press OK to save settings.
- Press the M key again to save the setting and exit the interface.





Note: After power-on, the video camera adopts all the preset settings, except for audio recording mode. You can change settings as you desire.

① Set video camera parameters.

- Ex.: Select “ ” for video recording “ ” for audio only, “ ” for Time Lapse, “ ” for Auto video.
- Resolution for video recording: Select the desired resolution for video recording. You can set this parameter to the 1080P, 1080i, 960P, 720P, or 480P resolution.

For the PAL system	1920x1080P 25f 16:9	1920x1080i 50f 16:9	1280x960P 25f 4:3	1280x720P 50f 16:9	1280x720P 25f 16:9	848x480P 100f 16:9	848x480P 50f 16:9
For the NTSC system	1920x1080P 30f 16:9	1920x1080i 60f 16:9	1280x960P 30f 4:3	1280x720P 60f 16:9	1280x720P 30f 16:9	848x480P 120f 16:9	848x480P 60f 16:9



- c. View: This parameter involves four types of views: broad view (  ), medium view (  ), narrow view (  ), and small view (  ).

The following example shows the same picture in different views:



broad view



medium view







narrow view



small view

**The preceding views apply only to the 1080P or 1080i HD video recording and photo modes. You can select a view angle as you desire.**

- d. Bit rate: This parameter can be set to High bit rate (  ) or Normal (  ). If this parameter is set to High, pictures are clearer, but the file size increases.
- e. Laser SYNC video: Select "  " to enable the laser indicator, or select "  " (the default option) to disable the laser indicator.
- f. Time lapse: In the preview state, press the "M" key to enter the video recording setup interface, choose "Time lapse" and set the desired interval settings. The available options are **0.5s, 1s, 2s, 5s, 10s, 30s**. (This function is unavailable in 480P/100f and 480P/120f modes.)
- g. Auto video: In the preview state, press the "M" key to enter the video recording setup interface, choose "Auto video", and set the count-down time before the automatic video recording. The available options are **5s, 10s, or 20s**.
- h. 180°photo rollover: In the preview state, press the "M" key to enter the video recording setup interface, and choose "180° Photo Rollover".

This function allows you to shoot photos from any angle. The 180° photo rollover function is unavailable for video recording in 480P/100fps and 480P/120fps modes.

- i. Display time: In the preview state, press the M key to enter the video recording setup interface, choose **"DISPLAY TIME"**.

If you set this parameter to **"ON"**, the video camera automatically records the date and time during video recording and displays them in the bottom-right corner of the screen. If you set this parameter to **"OFF"**, the video camera does not display the date and time during video recording. (**The display time function is unavailable for video recording in 1080i, 480P/100fps, 480P/120fps modes.**)

Note:

- a. In audio recording mode, press the **"Video"** key once to start audio recording. The audio recording duration is displayed in the upper-right corner of the TFT screen, and the green indicator blinks slowly. Press the **"Stop"** key to stop and store the currently recorded audio file. In such a situation, the green indicator is off, and the red indicator is constantly on (the operation prompt is displayed on the LCD segment screen), and the video camera restores to the state for audio recording.
- b. During audio recording, the video camera responds only to the **"Stop"**, **"Power off"** keys.
- c. When the laser SYNC video function is enabled, the laser icon is displayed in the upper-left corner of the preview screen, indicating that the video camera is in such a shooting mode. The laser will be turned on when starting video recording, and turned off when stopping video recording.
- d. zooming is not required in 480P/100fps, and 480P/120fps video recording mode.

② Set camera parameters.

- a. Resolution: Select the required resolution for shooting. You can set this parameter to **"3.0M"**, **"5.0M"**, or **"8.0M"**.
- b. single shot : When the camera is set to the single-key shooting mode, one picture is captured when the **"Photo"** key is pressed once.
- c. Fast shot: three fast-shot modes are available: 3 p/s, 6p/s and 10 p/s (photo/second). Select the desired mode and press Photo key, the camera will take pictures for one second with prompt tones.
- d. Auto cont. capture: Pictures is captured at intervals of 2s, 3s, 5s, 10s, 20s ,30s or 60s until the **" Stop "** key is released, the memory card is full, or the battery power is low.
- e. Timed shooting: Select the reverse-counting time for auto-shooting (This parameter can be set to 3s, 5s, or 10s), and

choose **"Timed Shooting"** and press the **"M"** key to return to the preview state. Then press the **"Photo"** key to start reverse counting timer. When the preset time is reached, the auto-shooting indicator blinks, and the camera takes a picture. To restore to other shooting modes, set **"Timed Shooting"** to **"OFF"**. Otherwise, the camera maintains in timed shooting mode.

- f. Display time: In the preview state, press the **"M"** key. On the setup interface, choose **"Display Time"**. If you set this parameter to ON in advance, the camera automatically records the date and time during shooting and displays them in the bottom-lower corner of the photo. If you set this parameter to OFF in advance, the camera does not display the date and time during shooting. (**The display time function is unavailable for photo shooting in 1080i, 480P/100fps, and 480P/120fps modes**).

### ③ Set system parameters

- a. Prompt tone: Set this parameter to **"ON"** to enable the tick tone or OFF to mute the tick tone.

Note: This parameter cannot be set to mute the prompt tones for shooting and video recording. Instead, this parameter can only be set to mute the tone generated upon pressing a key on the TFT screen and no-operation prompt tones.

- b. Status indicator: After choosing the required menu, set this parameter to ON (turning on the status indicator) or OFF (turning off the status indicator). By default, set this parameter to ON.
- c. OSD: Set this parameter to **"ON"** by default to display all icons on the video. If these icons are not desired, please set this parameter to **"OFF"** to remove them.
- d. Video content loop: When this parameter is set to ON, a recorded video file is automatically saved once by segment every 15 minutes. When this parameter is set to OFF, a recorded video file is automatically saved once by segment every 30 minutes.
- e. Auto to standby: Set this parameter to OFF, 2 mins, 5 mins, or 10 mins. You can select the time for automatic standby. After presetting the time, the system starts counting time when there is no task or operation. When the preset time is reached, the SD22W video camera disables the input/output and enters standby mode. During time counting, the system restarts counting time if any tasks or operations are carried out. During the standby period, the SD22W video camera starts working if the Video, Photo, or Stop key is pressed. In factory setting, this parameter is set to OFF.
- f. TV output system: Set this parameter to NTSC or PAL. You can set the video system for output on a TV set. A black screen appears for two seconds during switchover between the NTSC and PAL systems, and this situation is normal.

Note: Before using the video camera, select NTSC or PAL depending on your region. After the video system is selected, the light source frequency also changes to avoid image blinking during video recording.

- g. Contrast: Set this parameter to **"Standard"** by default. To improve the image effect during night shooting, set this parameter to **"Enhanced"**.
- h. ISO sensitivity: This parameter is set to **Auto** by default. To improve the image effect during night shooting, set this parameter to **"Low lux"**.
- i. Metering: Set this parameter to **"Average"** by default to ensure the general exposure effect. If the central area is dark but the surrounding area is bright, set this parameter to **"Central Area"** to improve the imaging effect in the central dark area. If the central area is bright but the surrounding area is dark, set this parameter to **"Central Spot"** to improve the imaging effect for the surrounding dark area.
- j. G-Sensor (Vehicle black box): If this parameter is set to **"ON"**, the video camera starts video recording when the video camera is shaken or when the vehicle starts. If the video camera does not shake or when the vehicle stops, the video camera stops video recording in about three minutes. By default, this parameter is set to OFF.
- k. Language: Press the "**<**" or "**>**" key to choose your desired language.
- i. Date/time: You can adjust the date and time, which are overlapped in the bottom-right corner of a video or shooting file during video recording or shooting.
- m. Format: Select **"Format"** to remove all the files.

Note: If a memory card is inserted, the video camera formats the memory card.

- n. Recover factory setting: This parameter restores all parameter settings to the factory settings. After you set this parameter, the system displays all the menu options in English. Press the M key to display menu options. Press the "**<**" or "**>**" key to display the **"System Setup"** menu. Press the "**-**" key, and choose **"Language"**. Then set the system in your desired language. After resetting to the factory setting, the system displays 01/01/2013 00:00 for the time.
- o. Ver: This parameter only shows the version number of the software used on the video camera.

When selecting a state from a submenu, press the **"M"** key for a backward operation, and press **"OK"** for confirmation.

## 1. Insert a Micro SD card into the SD22W video camera.

Note:

- Use a branded Micro SD card, for example, Transcend Class 10 memory card.
- When using a Micro SD card on the camera at the first time, you should format it on the camera and restart. Meanwhile, the WiFi signal name and password is reset to defaults. If formatting fails, you can format it on PC.

## 2. Powering on the SD22W Video camera

Turn the power switch to the ON position to power on the SD22W video camera. At this time, the red indicator is on, and the SD22W video camera changes to the preview state.

Note:

- If the battery power is low, the "■" symbol is displayed on the TFT screen together with a prompt.
- If no Micro SD card is inserted, no symbol is displayed in the bottom-right corner of the TFT screen.

## 3. Recording a Video

In the preview state, press the "Video" key to start video recording. The video recording duration is displayed in the upper-right part of the TFT screen. The "Video/Audio indicator (green)" and the "Video/Photo indicator (green)" on the top of the video camera blink slowly. The recording duration is correctly displayed on the LCD segment screen. During video recording, the video camera responds only to operations for the zoom in (+) and zoom out (−) keys. Press the "Stop" key once to stop and save the currently recorded video file, and the video indicator (green) on the front side is off. The video camera restores to the preview state. The recording duration disappears on the LCD segment screen.


Note:

- During video recording, turn the power switch to the "OFF" position to power off the video camera after saving the currently recorded file.
- During video recording, if the battery power runs low, the system saves the currently recorded file and enters standby mode, displaying a prompt of "Low battery" on the TFT screen, until the video camera is powered off.
- During video recording, if the Micro SD card is full, the system saves the currently recorded file. The system also displays a message "Card full" on the TFT screen, indicating that the Micro SD card is full. In addition, the duration for video recording stops on the LCD segment screen, and the system restores to the preview state.
- In cyclic recording mode, the system automatically saves a file every 15 minutes. (The cyclic recording function and the pre-video function cannot be simultaneously enabled.)

- e. If the D23 backup battery is provided and fully recharged, the video camera can continuously record video programs for about four hours and record audio programs for about seven hours.
- f. In WVGA/100 and WVGA/120 modes, the video camera does not support the time display, zooming, and 180° photo rollover functions. In 1080i/50 and 1080i/60 modes, the video camera does not support the time display function.
- g. In audio recording mode, the volume cannot be adjusted by pressing the “+” or “-” key. In playback, however, the volume can adjusted by pressing the “+” or “-” key.
- h. If the video camera provides a TFT screen and is in the preview state, after using a HDMI patch cord to connect the video camera to a HD display device, you can perform basic operations for the video camera on the HD display device (These basic operations, however, cannot be performed if no TFT screen is available on the video camera).

#### 4. Taking a Picture

Before taking a picture, perform the following operations to set the image resolution.

- Press the “M” key to display the setup interface.
- Press the “>” key to display the camera setup interface (.
- Press the “+” or “-” key and choose “Image Resolution”.
- Press “OK” to display the resolution setup menu.

You can set the resolution to any of the following three modes:

3M, with an image resolution of 2048 x 1536.

5M, with an image resolution of 2592 x 1944.

8M, with an image resolution of 3200 x 2400.

Four photo shooting modes are available for the video camera.

**Note:** In the preview state, please press the “Photo” key once to enter the shoot standby mode first, then you can take the photo when you press “Photo” key again.

- a. Single shot (the default mode)

In the preview state, press the “Photo” key once to take a picture while the system generates a click tone. The green indicator on the front side of the video camera also blinks once and the video camera restores to the preview state.

- b. Fast shot

On the camera setup interface, press the “+” or “-” key and choose “Fast shot”. Press “OK” to display the interface.

Press the ">" key, and choose **3 p/s or 6p/s or 10 p/s (photo/second)**. Press **"OK"** again to exit the interface. Press the **"M"** key to exit the camera setup interface. After press the **"Photo"** key to enter the shoot standby mode, the SD22W video camera continuously takes three pictures or six pictures or ten pictures when you press the Photo key once.

c. Auto cont capture

On the camera setup interface, press the "-" key and choose **"Auto Cont Capture"**. Press **"OK"** to set the time interval for continuous shooting to 2s, 3s, 5s, 10s, 20s, 30s or 60s. After press the ">" key to set the time interval. Press **"OK"** again to exit the interface. Press the **"M"** key to exit the setup interface. At this time, if you press the **"Photo"** key, the SD22W video camera takes a picture at each interval until you press the **"Stop"** key to cancel shooting.

d. Timed shooting

On the camera setup interface, press the "+" key and choose **"Timed Shooting"**. Press **"OK"** to set the time in auto-shooting mode to 3s, 5s, or 10s. Press the ">" key, and choose **"Timed Shooting"**. Press **"OK"** again to save and exit the interface. Press the M key to exit the camera setup interface. After setting is complete, the SD22W video camera starts reverse-counting timer when you press the Photo key once. When the preset time is reached, the SD22W video camera takes a picture.

## 5. Recording an Audio File

To record an audio file, perform the following operations:






- Press the **"M"** key on the video camera setup interface, choose **"Exe."**, and then press **"OK"** to display the video and audio options.
- Press the "<" or ">" key, and choose **"🎤"** for audio only, and press **"OK"** again. The system gets ready for audio recording.
- Press the **"Video"** key to start recording an audio file. At this time, the green indicator blinks slowly. The video camera also displays the audio recording symbol on the TFT screen and starts counting time. In addition, the recording duration is correctly displayed on the LCD segment screen.
- Press the **"Stop"** key to save and stop the currently recorded audio file. At this time, the green indicator on the front side is off. The video camera restores to the preview state for audio recording. The recording duration also disappears on the LCD segment screen.

After audio recording is complete, press the "M" key. On the system setup interface, choose "Exe.", and press "OK" to display the "Audio" option. Press "OK" to display the video and audio options, and choose "Video". Press "OK" again to exit the setup interface. The video camera restores to the preview state for video recording.

Note: the system will enter the video standby mode after restarted.


## 6. Playing Back a File

You can view the recorded audio/video and photo files on the SD22W video camera. To view a file, perform the following operations:


- Press the "" key to display the playback interface. Press the "" key again to exit the playback interface.
- Select "" (the video files interface) to view a recorded video file. Select "" (the photo files interface) to view a photo file. Select "" (the mixed file interface) to view all the video, audio, and photo files.

If there are many files, it takes a few seconds time for the video camera to display the preview interface.

### 1) Playing a Video File

To play a video file, perform the following operations: On the video file interface (  ), press the "+", "-", ">", or "<" key to display all the files displayed in thumbnails. Select the required file, and press OK to play it.


When playing a video file, you can use the following keys:

Key	Description	Key	Description
+	Turns up the sound volume.	-	Turns down the sound volume.
<	Plays a file in fast rewind mode when you press and hold this key for a short time.	>	Plays a file in fast forward mode when you press and hold this key for a short time.
	Resets and plays a file from the beginning when your press this key. Returns to the playback interface when you press this key again.	OK	Starts or suspends playing a video file when you press this key.


Note: You can set the fast forward functions to a 4X, 8X, or 16X speed. During the fast play, you can press OK to resume normal playing.





## 2) Viewing a Photo File

To view a photo file, perform the following operations: On the photo file interface (  ), press the "+", "-", ">", or "<" key to display all the files displayed in thumbnails. Select the required file, and press OK to view it.


When viewing a photo file, you can use the following keys:

Key	Description	Key	Description
+	Zooms in a picture. In zoom-in mode, locks a picture and moves it downwards when you press OK.	-	Zooms out a picture. In zoom-in mode, locks a picture and moves it upwards when you press "OK".
<	Moves a picture rightwards.	>	Moves a picture leftwards.
	Resets and plays a file from the beginning when your press this key. Returns to the playback interface when you press this key again.	OK	In zoom-in mode, switches between the "+" and "-" keys.

## 3) Playing an Audio File

To play an audio file, perform the following operations: On the mixed file interface (  ), press the ">" or "<" key to display all the audio files in "  " mode. Select the required file, and press OK to play it.

When playing an audio file, you can use the following keys:

Key	Description	Key	Description
+	Turns up the sound volume.	-	Turns down the sound volume.
<	No function is provided.	>	No function is provided.
	Resets and plays a file from the beginning when your press this key. Returns to the playback interface when you press this key again.	OK	Starts or suspends playing an audio file when you press this key.

Note: The fast forward and rewind functions are not provided for playing an audio file.

## 7. Deleting, Protecting, and Automatically Playing a File

In playback mode, you can press the "M" key to delete, protect, and automatically play a file.

### 1) Deleting a File

On the video, photo, or mixed file interface, you can delete a video file, a photo file, or all the files.

To delete a file, perform the following operations: Select a file to be deleted. Press the "M" key to display the operation interface. The following options are displayed on the operation interface.

- Delete single: deletes a picture. Press OK to display the options for deletion. Select "√" or "×" based on the displayed message. An option marked with "√" will be deleted.
- Delete all: deletes all the unprotected pictures.

### 2) Protecting a File

On the video, photo, or mixed file interface, you can protect a video file, a photo file, or all the files.

To protect a file, perform the following operations: Select a file to be protected. Press the "M" key to display the operation interface. The following options are displayed on the operation interface.

- Protect single: protects a file.  
Press "OK" to display the options for protection. After you select a file to be protected and press "OK", the system automatically returns to the playback interface.
- Protect all: protects all the files.  
Press "OK" to display the options for protection. After you select all the options to be protected, the system automatically returns to the playback interface.
- Unlock single: unlocks a protected file.  
Press "OK" to display the options for protection. After you select a file to be unlocked and press "OK", the system automatically returns to the playback interface.
- Unlock all: unlocks all the protected files.  
Press "OK" to display the options for protection. After you select all the files to be unlocked and press "OK", the system automatically returns to the playback interface.

Note: For a protected file, the "🔒" icon in gray is displayed in the bottom-left corner of the preview interface. After being unlocked, a file is unprotected, and the "🔓" icon in blue is displayed in the bottom-left corner of the preview interface. A protected file cannot be deleted, but can be deleted by a formatting operation.

### 3) Automatically Playing a File

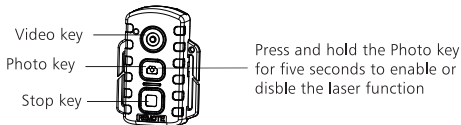
In the photo file interface, the SD22W video camera can automatically play photos in sequence every five seconds.

To automatically play a file, perform the following operations: Enable the playback function, and press "OK".

### 8. Using a Remote Controller

The SD22W video camera is equipped with a remote controller, which is used for control of video recording, shooting as well as turning on/off a laser. After you pressing the corresponding key, the red indicator on the remote controller blinks once. The following figure shows the functional keys of the remote controller.

To match the functions of the remote controller with those of the SD22W video camera one to one, perform the following operations for code pairing before using the remote controller.



— Press the Video key on the SD22W video camera in power off.

— Turn the power switch to the ON position.

— Release the Video key. Then hold the Video and Stop keys on the remote controller once within three seconds.

After successful code pairing, the SD22W video camera generates the tick tone twice.

Note:

- To check whether code pairing is successful, use a wireless remote controller to control the SD22W video camera. The control functions involve starting/stopping video recording, shooting, waking-up in standby mode, and turning on/off the laser indicator. For each operation, the SD22W video camera generates a tick tone, indicating that the operation takes effect. When you use the remote controller to stop video recording or turn off the laser indicator, the SD22W video camera generates a tick tone twice.
- The remote controller must be used within a distance of up to 10 meters in an obstacle-free and horizontal angle.
- In standby mode, you can press the Video, Photo, or Stop key on the remote controller to start the SD22W video camera.

## 9. Starting the SD22W Video camera in Standby Mode

The SD22W video camera enters preview mode after power-on. If no task or operation is carried out within the preset standby time, the system automatically enters the standby mode to save power. To wake up the camera from standby state, you can press the **"Video"** , **"Photo"** or **"Stop"** key, or press any key on the remote controller.

Note:

- a. In the standby state, the system does not start when you press any key on the TFT screen.
- b. In the standby state, no information is displayed on the LCD segment screen.

## 10. Connecting the AV Output

In the preview state, connect the SD22W video camera to a display device using an AV cable. After being connected to a display device, the SD22W video camera can still implement all its functions.

## 11. Connecting the HDMI Output

In the preview state, connect the SD22W video camera to an HD display device using an HDMI patch cord. After being connected to the HD display device, the SD22W video camera can implement all its functions.

Note: Incorrect removal of the HDMI patch cord may result in exceptions on the SD22W video camera. After being restarted, the SD22W video camera can restore to the normal state.

## 12. Connecting the SD22W Video camera in USB Mode

- a. To connect the SD22W video camera in USB mode, perform the following operations:  
If no battery is provided for the SD22W video camera before delivery, connect the SD22W video camera using a USB power adapter to implement all the functions.  
The corresponding messages are displayed for operations on the LCD segment screen and the TFT screen.
- b. In the power-on state, connect the SD22W video camera to a computer for accessing the Micro SD card.  
The USB connection state icon is displayed on the LCD segment screen, and the green indicator also blinks slowly.
- c. Incorrect removal of the USB power adapter may result in exceptions on the SD22W video camera. After being restarted, the SD22W video camera can restore to the normal state.

## 13. Prompt Tones upon Operations

The SD22W video camera can generate various prompt tones upon operations.

- a. In normal cases, the SD22W video camera generates a tick tone, indicating that the operation is valid when you press the Video or Photo key once.

- b Upon stopping video recording, the SD22W video camera generates a tick tone twice, indicating that the video recording operation stops.
- c If code pairing is successful upon a power-on operation, the SD22W video camera generates a tick tone twice, indicating that the code pairing operation is successful.
- d During video recording, the SD22W video camera does not generate a tick tone when you press the Photo key.
- e When any operations are performed on the TFT screen, you can enable or disable the function for generating a tone. Specifically, press the M key when the SD22W video camera is in the preview state. Then press the "<" or ">" key to display the Setup menu. Press the "+" or "-" key, and select Prompt tone.
- f During video recording, the SD22W video camera generates a tick tone twice, indicating that the video recording operation stops when you press the Stop key on the remote controller once.
- g During video recording, no prompt tone is generated by the SD22W video camera or by the speaker on the TFT screen when you press the Photo key on the remote controller once.
- h In the standby state, the SD22W video camera generates a tick tone twice, indicating that the main system starts when you press a key on the remote controller.

#### 14. Laser Indicators

The SD22W video camera provides laser indicators for warning operations.

- a After the SD22W video camera is powered on, the laser indicator is turned on when you press and hold the **"Video"** key for three seconds regardless of the working state.
- b If the laser indicator is on, it will be turned off when you press and hold the **"Video"** key for three seconds.
- c In the standby state, you can also turn on or off the laser indicator.
- d You can use a wireless remote controller to turn on or off the laser indicator.

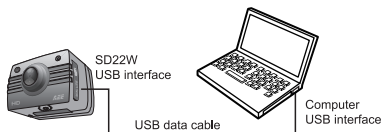
Note: Pressing the **"Video"** key for three seconds to turn on or off the laser indicator does not affect the setting of the Laser SYNC video parameter in "Parameter Settings."

#### 15. Turning On/Off the TFT Screen

- a. After the SD22W video camera is powered on, you can press and hold the Photo key for three seconds to turn on or off the TFT screen.
- b. The Photo key on the remote controller does not provide the function for turning on or off the TFT screen.

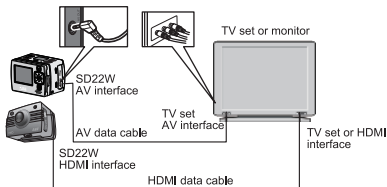
## 1. Connecting a USB Data Cable

After video recording is complete, you can copy the recorded images to a computer for play by using a USB data cable. You can also remove the Micro SD card from the SD22W video camera and access the image data by using a sensor. The Media Player software is preferred for playing a file.



### Note:

1. Before removing the USB data cable, power off the SD22W video camera.
2. When the power switch is in the OFF position, you can recharge the battery on the SD22W video camera. At this time, the red indicator blinks slowly.
3. When the power switch is in the ON position, you can copy the recorded files from the SD22W video camera to the computer.



2. Connecting with an HDMI Cable or an AV Cable, You can play recorded files on a TV set or a monitor that has a HD port, using an HDMI cable to connect the SD22W video camera to the TV set or monitor.

### Note:

1. After connecting to a monitor by HDMI cable, select the proper input source for the SD22W video camera to play files.
2. When using an AV cable, connect the terminals of the AV data cable to the ports in the same color on the TV set or monitor. Ensure that the TV set or monitor is properly grounded.
3. Adjust the parameter settings of the monitor to achieve the optimal display effect.

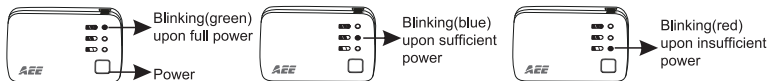
## 1. Installing a Battery

You can install the D23 battery onto the SD22W video camera without setting any parameters for power supply, as shown in the following figure:



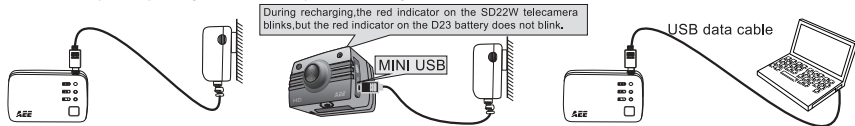
## 2. Checking the Battery Power

You can gently press the Power key to check the power of the backup battery. The LED indicator on the battery blinks for three seconds in different colors to show the current power.



## 3. Recharging the Battery

You can connect the standard power unit of the SD22W video camera to the USB recharging interface of the D23 battery or connect a computer to the USB recharging interface of the D23 battery by using a USB data cable for recharging, as shown in the following figure. This backup battery has automatic protection against overcharging and short circuit. The red indicator light keeps flashing when charging the battery and the green indicator light is on when the battery is fully charged. (The battery can be charged for 500 times.)



Note: 1. Do not remove the backup battery randomly.

2. If the SD22W video camera is not used for a long time, recharge the battery every six months to extend the battery life.

The SD22W video camera uses a power unit certified by the following authorities.



UL mark  
U.S. Power  
Certification



C-TICK mark  
Australia Power  
Certification



CE mark  
E.U. Power  
Certification



GS mark  
Germany Power  
Certification



CCC mark  
China Power  
Certification



PSE mark  
Japan Power  
Certification



BS mark  
U.K. Power Certification

Note: The surface temperature of a power unit in use may increase, and this situation is normal.

## Articles in the Packing Box

The articles in the packing box are as follows:

SD22W



TFT monitor



Remote  
controller



Dedicated  
waterproof  
housing



Standard  
battery



Backup  
battery



Flat-mounted  
assembly



Flat-surface  
accessory



Holder  
(optional)



Micro SD card  
(optional)



AV output cable



USB cable



Cloth bag



strap



moistureproof  
cotton



CD ROM  
(optional)

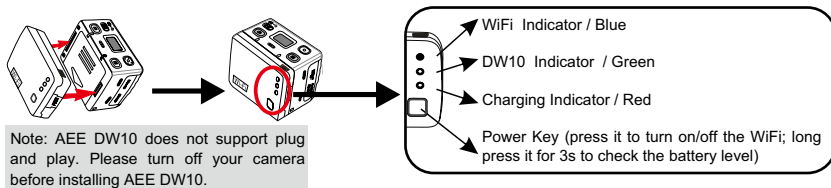


User's Manual





1. Installation: install AEE DW10 onto your camera (as shown in the figure below), and it will auto recognize AEE DW10 and enter the standby state when you turn on your camera.

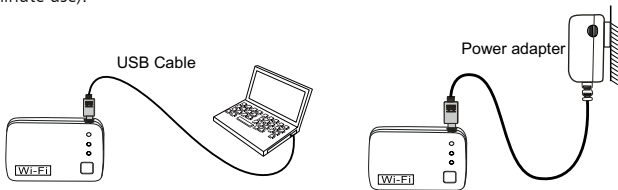


2. Long press the power key for 3s:
  - 1) If the blue indicator remains on for 3s and then goes out, the battery power is higher than 65%;
  - 2) If the green indicator remains on for 3s and then goes out, the battery power is between 35% and 65%;
  - 3) If the red indicator remains on for 3s and then goes out, the battery power is lower than 35%.

Prompt for low battery: in case of low battery, the red indicator will flash quickly.

3. Charging: connect AEE DW10 to the power supply or computer through the attached charger or USB cable (as shown in the figure below).

AEE DW10 has the overcharge protection function. In the charging process, the red indicator will flash slowly. When the battery is fully charged, the red indicator will remain on. (Each full charge can support about 70-minute use).



## How to download the APP software.

The Wi-Fi APP is already uploaded to iPhone APP store and google play store, customers can freely download it.

1. For Android phone users: Entering the google play store, search "AEE APP" (quotation marks is needed), download and install it, following the user manual to connect the Wi-Fi and operate.
2. For iPhone users: Entering the iPhone APP store, search AEE , download and install it, following the user manual to connect the Wi-Fi and operate.

APP icon:



## 4 Connect a mobile device to WiFi:

- 1) Turn on your camera and DW10 and wait until the blue WiFi indicator flashes. Enable the WiFi searching function of a mobile receiving device to find the wireless signal source named "AEE Magicam" and then click "Connect" to connect the mobile device to your camera (default password: 00000000).
- 2) Click the application icon "AEE Magicam" on the mobile device to display the icon ( ) shown in Fig. 1 Enter the interface shown in Fig. 2 to remotely view your camera's screen and set your camera's functions.

Note: In case of WiFi connection failure, the icon " " will appear. Select "Yes" to try to connect again. If you select "No", click the icon " " to enter the WLAN settings interface or click the icon " " to enter the main interface to view local files only (no other operation is supported).



Fig. 1 WiFi Connection Interface

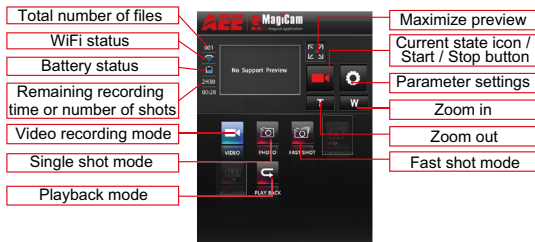




Fig. 2 WiFi Control Interface

Note:

1. You can remotely control your camera by clicking the icons at the main interface.
  - 2H30**: display the remaining recording time in video recording mode;  
display the remaining number of shots in photo shooting mode.
  - 00:28**: Recording duration / photo No.
2. The mobile device must be used within a distance of max. 40 meters from the SD22W in an obstacle-free and horizontal angle.

## Operating Instructions for WiFi Control Interface

### 1. Video Recording

Click the Video recording mode icon "  ". The current state icon will display as "  ", click it to start / stop video recording.

Click the icon "  " to maximize the preview (See Fig. 3).

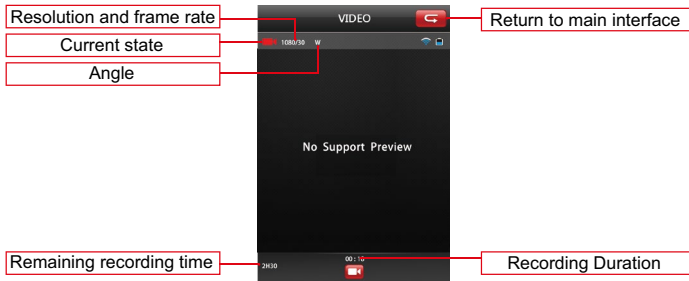


Fig. 3 Video Recording Mode

You can set up your desired recording resolution in the parameter setting interface. The options are: 1920x1080 25fps/30fps; 1280x960 25fps/30fps; 1280x720P 50fps/60fps; 1280x720P 25fps/30fps; 848x480P 100fps/120fps; 848x480P 50fps/60fps.

## 2. Single shot

Click the Single shot mode icon "  ", it will turn blue "  ". The current state icon will display as "  ", click it to take one picture.

Click the icon "  " to maximize the preview (See Fig. 4).

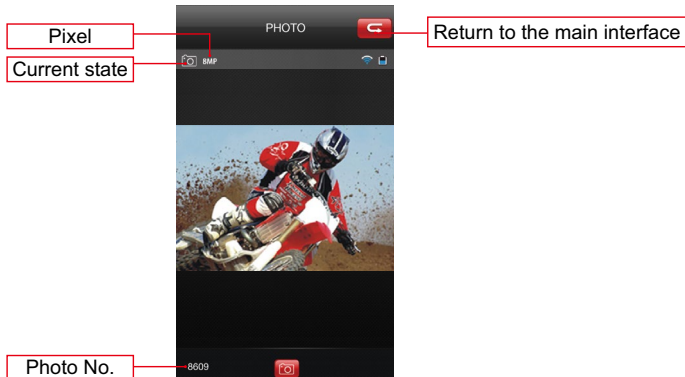


Fig. 4 Single Shot Mode

You can set up the pixel in the parameter setting interface.

### 3. Fast Shot

Click the Fast shot mode icon "📷", it will turn blue "📷". The current state icon will display as "📷", click it to take pictures within one second.

Click the icon "📷" to maximize the preview (See Fig. 5).

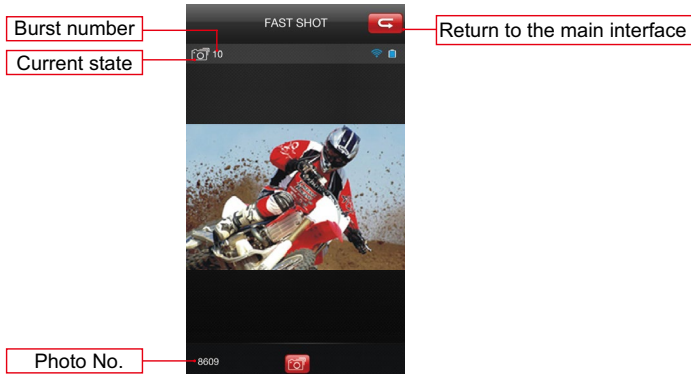


Fig. 5 Fast Shot Mode

You can set how fast the camera takes pictures in the camera setting interface.

#### 4. Playback

Click the icon "↶" to enter the interface shown in Fig. 7 to remotely play videos and photos.



Fig. 7 Playback Interface

Slide the icon "🔍". If you select "Camera Storage", you can replay the files stored on the camera. If you select "Mobile Device Storage", you can replay the files downloaded from the camera to the mobile device.

Click the icon "⚙️" to enter the App settings interface.

Click the icon "📷" to return to the WiFi control interface.

Click the icon "📁" to enter File selecting / Media sharing interface.


Click the icon "⬇️" to download media files from the camera to your mobile device.


Click on the thumbnail to view it in large preview. You could slide left and right to select the desired file.








In the large preview mode:

Click the icon "  " to return to the thumbnail preview interface.


Click the icon "  " to share the current file to a social networking website or send it by E-mail.


Click the icon "  " to transfer and play the current file on a DMR device.

Click the icon "  " to download the current file to your mobile device.

Click the icon "  " to delete the current file.



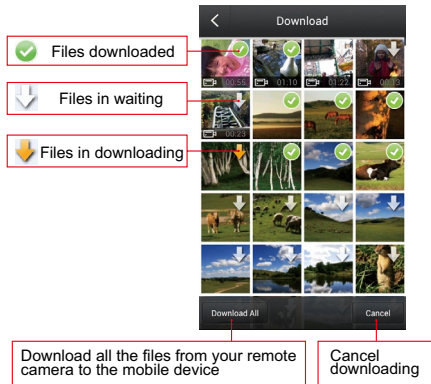
Click the icon "  " to view the current file information.

Click the icon "  " to enter the video trimming interface.



**Note: please download it to the mobile device before editing any video file.**

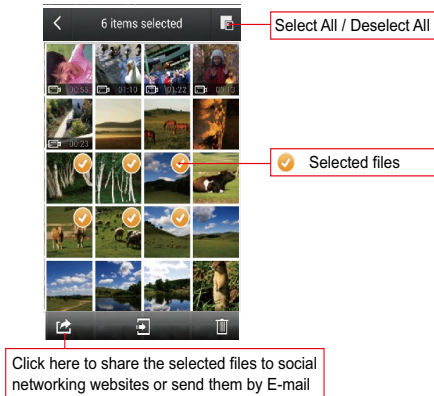
### Download Files to Mobile Device

Return to the thumbnail preview interface and click the icon "  " to enter the Download interface. Click the desired files to download them to your mobile device.



\* This function is only adopted in iPhone

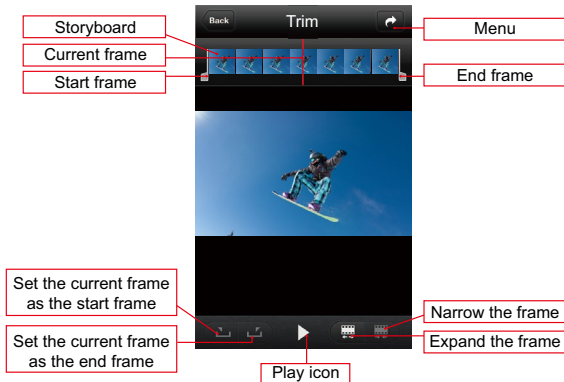
In the thumbnail preview mode, slide the icon "  " to view local files. Click the icon "  " to enter the interface shown in the figure below, and then click the desired files to share them to social networking websites or send them by E-mail.



\* This function is only adopted in iPhone

## Trim Videos


When viewing the downloaded files on the mobile device, you can click the icon "📺" at the bottom of the screen to enter the video trimming interface shown in the figure below:




\* This function is only adopted in iPhone

## Change WiFi Connection Name and Password

1. Change the WiFi connection name:

Connect your camera (with TF card installed) to the computer and turn on your camera. On the computer, double click "My Computer" to find and enter the removable disk, and then open the " " wifi.conf file in the folder "MISC". Find "ESSID=AEE Magicam" and "AP\_SSID=AEE Magicam". Change the content following the equal sign "=" to your desired name and then click "Save". (Note: the name following "ESSID=" should be exactly same as that following "AP\_SSID=.")

2. Change the WiFi connection password:

Connect your camera (with TF card installed) to the computer and turn on your camera. On the computer, double click the icon "My Computer" to find and enter the removable disk, and then open the " " wifi.conf file in the folder "MISC". Find "PASSWORD=00000000" and "AP\_PASSWD=00000000". Change the content following the equal sign "=" to your desired password (containing at least 8 digits) and then click "Save". (Note: the password following "PASSWORD=" should be exactly same as that following "AP\_PASSWD=.")

### Note:

1. If the TF card is formatted, you need to reconnect AEE SD22W to your camera in order to find the folder "MISC" and change the name and password.
2. Above images for reference only, subject to our available App.
3. Please do not plug in or pull out TFT display or DW-10 when camera is power-on.
4. When connecting the DW10, please do not press video or photo button until the wifi icon comes up.
5. When connecting the DW-10, the camera is in control of WiFi function. So G-sensor, Auto standby, Remote control, HDMI/AV-OUT functions are not available.

The optional accessories for the SD22W video camera are as follows:

Portable power unit  
(2500 mAh)



Curve-surface  
accessory



Bicycle-mounted  
accessory



Bicycle-mounted  
accessory



Glass-suction  
bracket



Helmet-top-mounted  
accessory



Soft-and flat-mounted  
accessory



Accessory for  
Surfing



Accessory for  
installation onto  
helmet top



HDMI output cable



L-shaped helmet  
accessory



Back Clip



Power adapter



Car-Charge



**The precautions for movable accessories are as follows:**

1. Use a rubber stopper for removable components.
2. Use the soft- and flat-mounted accessory only on a smooth plane in a car.

Technical specifications of the SD22W video camera

Option	Specifications	Option	Specifications
View angle	175°	Format for video recording (in NTSC system)	1080P (1920x1080P) 30 frames / second
Number of pixels	8 million CMOS sensor (3200 x 2400)		1080i (1920x1080i) 60 frames / second
Battery	1000 mAh lithium battery + 1100mAh backup battery		960P (1280x960P) 30 frames / second
Power consumption	650 mA @ 3.7 V (Max.)		720P (1280x720P) 60 frames / second
Continuous duration for video recording	4 hours (Max.) [with backup battery]		720P (1280x720P) 30 frames / second
Continuous duration for audio recording	6 hours (Max.) [with backup battery]	Video recording	480P (848x480P) 120 frames / second
Standby duration	200 hours (Max.)	480P (848x480P) 60 frames / second	
Recharging duration	USB Cable: About 3.5 hours Power Adapter: About 3 hours	Audio recording	Recording video files in MOV format
Capacity of the Micro SD card	Up to 64 GB secure digital high capacity (SDHC)	Shooting	Recording audio files in WAV format
Operating humidity	15%~85% RH	USB interface	3M, 5M, 8M JPG images available for shooting resolution
Storage temperature	-20°C~+60°C	Distance for remote control	USB2.0
Operating temperature	-10°C~+50°C	Distance for Wi-Fi	10 meter (Max.)
File storage	30 minutes per segment in normal cases, 15 minutes per segment in cyclic recording mode	Operating system	40 meter (Max.)
		Weight	Windows XP, Vista or Above, Windows 7, or Mac OS
		Dimensions (W x H x D)	90 g (without the screen) 115 g (with the screen)
			60 mm x 51 mm x 42 mm

NOTICE: Specifications are subject to minor change with upgrade and update. Please base on real object.

The waterproof housing is a precision component. When using the waterproof housing, adhere to the following precautions:

1. Do not randomly remove or change the O-ring, key, and lens cover. Otherwise, the waterproof performance deteriorates.
2. Do not put the waterproof housing in a place where corrosive gases are easily generated due to strong acid or alkali. Do not make the waterproof housing in contact with chemical or corrosive objects, such as strong acid or alkali.
3. Do not put the waterproof housing in a place where temperature is high (50°C) or low (-10°C) for a long time to avoid deformation.
4. Do not expose the SD22W video camera to sunshine for a long time to avoid deterioration of the waterproof performance.
5. Before use, ensure that the O-ring is intact, the seal is litter-free, the housing is fully sealed, and the buckle is tight.
6. After using the housing in sea water, wash it using fresh water, clean it, and dry it in a cool place.

## Precautions for the 3M Dual-side Sponge Rubber

When using the 3M dual-side sponge rubber, adhere to the following precautions:

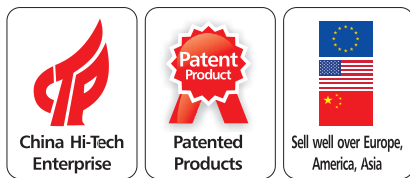
1. Before fixing the 3M dual-side sponge rubber, select a curved or flat surface to ensure proper contact between the sponge rubber and the curved or flat surface.
2. Before using the 3M dual-side sponge rubber, clean the surface where the sponge rubber is attached.
3. Before attaching the 3M dual-side sponge rubber, heat the surface of the sponge rubber using an electric blower, especially in a place where temperature is lower than -20°C.

## Notice

When using the SD22W video camera, pay attention to the following notice information:

1. During continuous use, the body temperature of the SD22W video camera increases. This situation is normal.
2. If the SD22W video camera is not used for a long time, remove and maintain the battery properly, and recharge the battery every six months to ensure the battery performance.
3. During recording, enabling the digital zooming function may affect the image quality.
4. Shooting view angles are slightly different in different working modes of the video camera.
5. If a video file is large, a computer or a special-purpose player is preferred for smooth play.
6. Cyclic recording and frequent recording/deleting operations may leave data fragments in the SD card, causing failure to record or save files. To solve this problem, just backup the data to an external storage and format the SD card.





Please read this user manual carefully and thoroughly before any attempt to install and operate this product and retain it for your future reference.



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