User Manual for CP40 Police Videoscope

CP40 series Police Videoscope is a product with infrared night vision function, developed and produced by COANTEC. The product has integrated hand-held design, compact and portable, 360°view and has no dead angle in its detections. The user can monitor in real-time through dual screens, take photos and record videos. In one unit, infrared and white light insertion tube of different specifications can be used changeably, effectively saving cost for the user.

CP40 series Police Videoscope

We are constantly committed to improving the functions of our products and service quality. We reserve the right to modify any product and software program, as well as the contents described herein without prior notice. To this manual, we have performed strict collation and repeated checks, but we cannot guarantee that all errors and omissions are identified. This manual is meant to be a guide to assist users in proper usage of Coantec products, but does not represent any of the software and hardware accessories. If you have any questions, please contact us by phone at +86-755-89728626.

I. Notes for the User

1.Usage and applicable scope

This product has infrared night vision function. The front-end probe can pass through narrow spaces for effective monitoring of the situation on site, without being discovered. It can take photos and record videos to provide more complete and reliable data for investigation and evidence collection. It is suitable for use by personnel in the departments of the police, armed police, fire control, procuratorate, customs and other institutions, that conducts work in anti-terrorism, criminal investigation, explosive handling, security check, anti-smuggling and rescue, so as to help the user have a better grasp of site conditions.

2. Maintenance and refitting

This product does not include any parts for the user to conduct repair work. Do not attempt to disassemble, refit or repair the product. Coantec does not assume any responsibility for any injury or loss caused to the user by the above acts. Maintenance service of this product is only provided by Coantec and its authorized dealers.

3. Safety precautions

1) Do not use this equipment to observe the inside of a human or animal.

2) Do not operate this equipment with an object while it is carrying an electric charge so as to avoid electric shock.

3) While using the equipment, do not touch the end of the lens directly. In particular, take note touching the lens after using the endoscope in a high temperature environment may cause burns.

4) Do not look directly into the intense light source of the LED light at the front end of the probe as it may affect your vision.

5) Do not use excessive force to bend, stretch, twist or roll the tube cable, to avoid damage to the device.

6) There may be dirt or stain on the screen after long-term use of the product, which will result in blurred images and affect data collection. Please wipe down the lens with alcohol before use.

7) Keep the insertion tube away from any liquid except for water, salt water, engine oil and light oil.

8) After using the equipment, promptly clean the front of the equipment's insertion tube to prevent corrosion.

9) While operating the equipment, gently toggle the joystick. In case of any abnormal situation, immediately stop observing. After adjusting the joystick to the middle position, carefully withdraw the insertion tube and shut down the equipment. Please contact the manufacturer or the dealer.

II. Overview of the Product

1. Appearance of the product

Fig.1

① Viewfinder
② Joystick
③ Brightness adjustment key
④ Photograph/video switch key
⑤ External display screen

Fig.2

⑥ Tactical flashlight (LED light)
⑦ HDMI interface
⑧ Micro USB interface
⑨ TF card slot
⑩ Insertion tube

⑪ Fastening nut
⑫ Photograph/video key

Fig.3

⑬ Diopter adjustment knob
⑭ Hook
⑮ LED power indicator light
⑯ Power display switch
⑰ Tactical flashlight switch
⑱ Power on/off key

Fig.4

⑲ Return/playback
⑳ Upward
㉑ Menu/confirm

㉒ Leftward
㉓ Downward
㉔ Rightward
㉕ Battery compartment
㉖ Knob to battery compartment

2. System Parameters

Size of built-in display screen	0.6-inch OLED display screen
Resolution of built-in display screen	800*600
Observation mode	Monocular
Size of external display screen	3.5-inch foldable LCD display screen
Resolution of external display screen	640*480
Photograph/video function	Photo taking and video recording
File format	Image: JPEG, BMP/video: MP4
Image preview	Preview as a list, images and videos are stored separately
Storage medium	Standard configuration is 8G TF card, supports up to 32G
Menu language	Simplified Chinese, Traditional Chinese, English, Japanese, Korean, French, German, Portuguese, Spanish, Russian, Italian, Dutch, etc
Image magnification	4X Zoom in at real time
Image Rotation	Image can be rotated automatically
Tactical flashlight	Intense light flash, emergency lighting, SOS signal
Structure and material	Drop-resistant outer shell
Output interface	Mini HDMI interface
Observation direction	Direct view
Lens diameter	Φ6
Camera pixels	1M pixels
Depth of field	100mm~∞

Field angle	70°
Illumination mode	Rear infrared light source
Wavelength of infrared light source	940nm
Luminosity adjustment	Adjustable from level 0-7 (white light insertion tube)
Backlight brightness	Adjustable from 3 levels
Observation distance	1-5m
Bending control	360°Mechanical all-way articulation
One-way bending angle	≥150°±10°
Effective working length	1-3M
Insertion tube	4-layer tube braided with tungsten alloy wire
Protection for device's durability	Buffer protection unit for connection of main unit and abrasion-resistant tube
Portable design	Military-grade removable shoulder strap
Storage device	Standard configuration is 8G TF card, up to 32G supported
Protection level of probe	IP67
Main unit hours of use	Synchronous display of double screens: approximately 4hours
Weight of device	About 1.1kg (including battery weight)
Power source	Detachable rechargeable lithium battery
Battery capacity	DC7.4V,5000mAh
Warranty period	One-year warranty

3. Operating environment

Main unit working temperature	-10°C-50°C LCD display screen need to be preheated in conditions under 0°C
Probe working temperature	-25°C-70°C Reduce guiding operation when under 0°C
Storage temperature	-20°C-60°C

III. Operating process

1. Taking out the equipment: open the instrument case and take out the device. Hold the probe when taking out to prevent collision.
2. Starting up preparation: check whether all accessories of the device are in good condition, confirm that the TF card has been inserted, and hold the power key to start up.
3. Real-time observation: operate the joystick to steer the probe, observe and search for targets through the viewfinder or external display screen.
4. Parameter setting: adjust parameters such as diopter and luminosity of light source so that displayed image is at the clearest.
5. Taking photos and videos: Take photographs and record videos as required, and retain image data in the observation process.
6. Tube-end cable recovery: toggle the joystick to the center position, confirm that the tube-end cable is roughly straight, and then withdraw it slowly.
7. Store the equipment: turn off the power, put the device back into the instrument case, pack the tube-end cable in good order, close the cover, and lock.

IV. Operating Guide

The functions of each key of CP40 series police videoscope under different working conditions are shown in the table below:

Shape of key	**Name of key**	**Real-time detection**	**Playback and preview**	**Play of video**	**System setting**	**Time setting**
	Power key	Power on/off				
	Tactical flashlight switch	Illumination/intense light flash/SOS				
	Power display switch	LED battery indicator				
	Return/playback	Preview photo/video	Return			
	Upward	-	Previous option	Fast forward	Previous option	Increase number
	Leftward	-	Previous option	-	-	Previous option
	Downward	-	Next option	Backward replay	Next option	Decrease number

	Rightward	-	Next option	-	-	Next option
	Menu/confirm key	Enter menu	Confirm	Pause/continue playing	Confirm	Confirm and proceed to next setting
	Photograph/video switch key	Switch between photography/videography mode	--			
	LED light brightness adjustment key	Adjust brightness level of LED light	--			
	Joystick	Control direction of the probe				
	Photograph/video key	Photograph/video				

V. Working mode

The working mode is divided into real-time detection mode, system setting mode and playback preview mode.

- Real-time detection mode

Hold power on/off key for 3 seconds until the "COANTEC" start-up screen is displayed. The system will enter real-time detection mode by default once the power is on. In this mode, the user can observe the built-in display screen through the viewfinder of the main unit, or directly view the image through the external display screen. The motion direction and speed of the front-end probe can be controlled through the joystick, and the probe can be locked in position by locking the joystick in place. Rotate the diopter adjustment knob on the viewfinder while observing to make the picture clearer.

1. The brightness adjustment key for LED indicator can be used to adjust the brightness of the light source (adjustable to 7 levels). The icon  in the upper right corner of the screen shows the current brightness level. After the white light insertion tube is connected, the brightness will change by level. After the infrared light insertion tube is connected, the brightness of LED indicator will not change (at this time, the light source is invisible infrared light).

2. The photograph/video switch key can be used to switch between photography and videography mode. The icon  is displayed in the upper left corner of the screen by default, which indicates that the device is in photo-taking mode. Press photo/video key on the back of the main unit to take photos directly and save them. The icon  in the upper left corner indicates that the device is in video recording mode. At this time, press photograph/video key to start recording. A continuous flashing red dot will be displayed in the upper left corner of the screen, indicating that the video is being recorded.
3. The external display screen is connected with the main unit through a Mini HDMI interface to display images synchronously with the built-in display screen. It can rotate clockwise to adjust the viewing angle, and the maximum angle that it can go is 270°. When folded, the screen will automatically turn off. When more than 1 person is coordinating in the investigation, the external display screen can be directly removed from the main unit during observation.
4. Press the tactical flashlight key on the side to turn on the LED flashlight on the back of the main unit. Press again to switch to intense-light flash, the light flashes every 3 seconds. Press it once more to switch to SOS signal, and the light will flash quickly. Press it again to turn off the flashlight. This function is not available once device is turned off.

- System setting mode

Press Confirm/menu key in real-time detection mode to enter system settings, and the following system parameters can be set:

1. Image magnification: zoom in/out on real-time detection images, and the number in the upper right corner of the screen indicates the current magnification (1 - 4 times).
2. Image display: set the real-time detection image to primary color /black and white /negative.
3. Reference line: enable/disable auxiliary coordinate reference line.
4. Time watermark: choose to enable/disable watermark of time.
5. Image flipping: set real-time detection image to auto flipping for /0 °/ 90 °/ 180°/ 270°.
6. Image format: the image storage format can be set as JPEG / BMP.
7. Time and date: set the date and time of the system.
8. Language setting: the system has more than ten languages, including Simplified Chinese, Traditional Chinese, English, Japanese, Korean, French, German, Portuguese, Spanish and Russian, etc
9. Card formatting: format the memory card, please use this prudently.
10. Restore to default: restore the device to the factory default settings.
11. Version information: select to access information on the current system version and upgrade the system.

- Playback/preview mode

In real-time detection mode, press Return/playback key to enter the file playback preview mode. The pictures and videos are arranged as a list on the left side of the screen in order of image shot, while specific information on the current file (time shot, file size, remarks) is displayed on the right.

After selecting the file, press icons  and  on the interface to view in full screen and delete the current file respectively.

1. In full screen viewing mode, these 7 icons  at can be found at the lower part of the screen. These buttons, respectively, allows you to zoom in/out pictures, move the enlarged picture to the left, right, up or down (to view parts of the picture), and return to the previous menu.
2. After opening the video file, the video will be played at normal speed. Press Up to speed up playback, and press Down to turn back the video. Press Confirm/ menu key to pause, and press it again to continue playing. Press Return key to exit playback.
3. Choose to delete file, and "√" and "×"will show on the screen，“×”will cancel deletion, and "√" will proceed with deletion.

VI. Read files

Take out the TF card from the card slot of the main unit, insert it into a card reader, and you the data in the card can be read directly through a computer. The files are stored in the path "My computer\ Removable disk \DCIM".

Caution: when reading data, do not pull out the TF card. Doing so might lead to abnormal errors occuring.

VII. HDMI connection

An external display screen can be connected to the main unit of the device through a Mini HDMI connection cable, and real-time detection image can be displayed on the external and built-in display screens simultaneously.

VIII. Powering off

Hold Power on/off key, and the shutdown screen will be displayed on the screen. At this time, you need to wait a few seconds for the system parameters and files to save. After saving, the device will shut down.

IX. Charging

 in the upper right corner of the screen displays current remaining battery power. When power is insufficient, please charge the device through the Micro USB interface of the main unit. Or you can turn off, in counterclockwise direction, to remove the two battery compartment knobs at the bottom of the main unit to replace with new battery. Take care of the positive and negative ends of the battery, and do not install it in reverse. To avoid the problem of over-discharging the battery leading to failure to charge, promptly fully charge the battery once the device shows a low-battery prompt.

Attention: this Micro USB interface is a charging interface, and has no data transmission function.

X. Replacement of replaceable insertion tube

Part I: Diagram for taking out the insertion tube

Step 1: Loosen the fastening nut from the bolt.

Step 2: Hold the bolt and push it upward to separate the cable from the main unit.

Step 3: Take out the nut and remove the tube-end cable from the upper end of the main unit.

Part II: Diagram for installation of insertion tube

Step 1: Load the insertion tube from the opening hole at the upper end of the main unit and point the triangle mark on the red rubber gasket directly on the upper part.
Step 2: Load the nut, lock the insertion tube from the bottom of the main unit, and the installation is completed.

Configuration
1 x Main unit
1 x Instrument case
1 x Card reader
1 x 8G TF memory card
2pcs of Rechargeable lithium batteries
1 x Charger
1 x Shoulder strap
1 x User manual
1 x Precautions for use

XI. Storage

1. Make sure to store the equipment in a clean, dry and stable place, keep it horizontal and maintain at normal room temperature;
2. Do not store the equipment in an environment with high temperature, high humidity, intense light, strong shock, high dust particles, pollution or that is corrosive;
3. Do not bump against other objects or handle the equipment roughly during storage;

4. When the equipment is not to be used for a long time, it should be stored after being charged fully, and should be charged to full once every three months.

XII. Trouble-shooting

Fault	Possible cause	Measure
The device does not work after the power turns on	The battery is running out of power or no battery is loaded	Charge or install the battery
Shut down automatically	Insufficient battery power	Charge the equipment or replace the battery
The device is stuck at start-up screen when the power is on	Failure of the system to start-up or insufficient battery power	Dismantle the battery, load it again and restart, or charge the battery
Images cannot be recorded or found	TF card does not have sufficient capacity	Replace the TF card or delete useless files

COANTEC®

SHENZHEN COANTEC AUTOMATION TECHNOLOGY CO.,LTD.
Floor 3,No.3,Crosslane 3,Yuanhu Road,Longgang District,Shenzhen,China
Tel : +86-755-8972 8626 E-mail : coantec@126.com
Web : www.chinavideoscope.com