



Shen Zhen Troy Intelligent Trading Ltd.

TVN-3500+P13 Large View Camera
Instructions for use



一、 Introduction

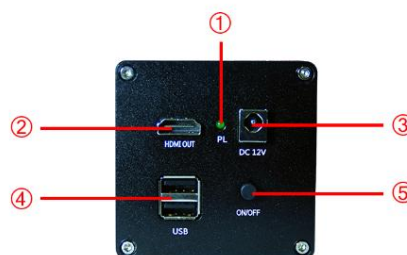
TVN-3500 large field of view industrial camera. The built-in precision optical focusing system, combined with a fast software algorithm, allows real-time auto-focusing, within adjustable limits, without adjustment, for a clear picture.

The camera outputs HD HDMI video signal, automatic exposure, automatic white balance, automatic saturation adjustment and automatic wide dynamic. The camera has functions such as image storage, video recording and reference determination. Easy to operate, you can do all the operation work with the mouse.

Built-in our patented image processing technology developed by our company, the colour reproduction is realistic and rich in details, which is very helpful for industrial special inspection.

This product is widely used in industrial inspection, medical observation, teaching and research, automation systems and other fields.

二、 Product structure diagram



- ① —Power indicator
- ② —HDMI output
- ③ 12VPower SS-HD port
- ④ 3500A F
- ⑤ — Start shutdown button



三、 Camera specifications:

HDMI camera 3500	
Chip structure	HIS+ARM
Operating systems	LINUX 3.10
Kernel structure	Dual Core Cortex-A9
Main frequency speed	1Ghz
Optical size	1/3"
Resolution	1920×1080
Frame rate	60fps
USB port	2 USB ports for connecting a USB stick, wireless mouse or keyboard
Mode of operation	Mouse operation
Operating voltage	DC 12V
Operating temperature	-10 degrees to 70 degrees
Dimensions	70*70*140
Weight	300g

四、 Instructions for use

Before using the camera, please make the following preparations:


- ① This camera does not require a lens and is fixed directly
- ② Connecting to the monitor using an HDMI video cable.
- ③ Fix the camera to the mount with the optional light source.
- ④ The camera is powered on, press the on button and make sure the camera indicator power light is on.



五、 Operating Interface

- ①Exposure adjustment
- ②White balance adjustment
- ③Saturation adjustment
- ④Sharpness adjustment
- ⑤Wide Dynamic Adjustment
- ⑥Defogging
- ⑦Crosshair

六、 Parameters

 The camera is an easy to operate camera and when switched on all functions are automatically adjusted by default, conditions such as exposure, white balance and saturation will change automatically according to external conditions and no manual adjustment is required. If you need to adjust parameters manually, turn off the x in the box to the left of this adjustment after switching on the camera.

(1) Camera image adjustment settings: after power on, according to the direction of the graphics, choose whether you need to mirror flip (mirror: graphics for left and right flip flip: graphics for up and down conversion.) (including: version update, language selection, picture saving format, version number); take pictures to capture pictures (when inserted into the U disk, click the photo button to save the image to the U disk); video



recording (need to insert the U disk, click the video to start recording, the recording button starts flashing red then start recording, after starting you can change the magnification and other operations, when finished recording the video, click the video again to end the recording.)

View (view photos saved on USB stick or local camera).

2) Exposure settings: set the exposure time, the longer the exposure time, the brighter the image brightness; adjust the image brightness gain, the greater the image gain, the brighter the picture display, but the gain increases at the same time, the image sharpness will increase.

(3) White balance setting: according to the surroundings of the object and the colour value of the object itself, the red, green and blue colours are adjusted to the original colour of the object, so that the object can be imaged more closely to the real thing.

(4) Saturation settings: Select camera saturation to saturate the image and increase the range of saturation for a fuller image of the object and a rounder image around the object.

5) Sharpness setting: Enhances edge brightness and darkness to make image features more visible. However, if it is too large it introduces large amounts of noise. Edge sharpening: local sharpening of the edges of an object. Texture sharpening: sharpen the surface texture of the object, the outer skin. Overall sharpening: sharpening the edges and surfaces of an object as a whole.



6) Wide Dynamic setting: suppresses glare and enhances the brightness of darker areas. Shadows: increases the shadow mask of the image, making darker areas darker Highlights: increases the local brightness highlights of the image, making brighter areas of the object more visible.

Intensity: the intensity of the object for wide dynamic, the higher the intensity the more obvious the contrast between light and dark.

7) De-fogging setting: deepens the contrast between light and dark to achieve the effect of de-fogging, removes blurred fog and makes the image clearer, the larger the de-fogging range, the more obvious the removal intensity.

8) Crosshair setting: Set the number of lines and click the up and down arrow keys behind to generate the corresponding number of lines on the image. After placing the mouse over a line the mouse arrow will change to a hand shape to move the line to the corresponding position; near this position fine adjustments can be made with the mouse wheel.



Introduction to Focus

There are three modes of focus, each corresponding to a different scene; the magnification of the camera is 10-140x, and when using the camera it is important to note that the object distance of the camera is at least ten centimeter in order to achieve a clear focus. For example, at an object distance of 400mm, the field of view is 310mm 0.65X at the minimum magnification and 38mm 3.3X at the maximum magnification.

Auto Focus: Automatically find the clearest focus point and adjust automatically when the camera height position changes

One-touch focus: One-touch focus adjustment, the focus will not change when the object or camera height changes, so you need to re-focus with one touch

Manual focus: manually adjust the focus distance, by controlling the +- of the focus distance, you can find the focus position by yourself.

Spotlight on the Region:

Full screen: full screen focus, full screen clarity

Centre: centre focus, centre clarity

Spot: selected area in focus, partial clarity

How to adjust the magnification of the camera:

The camera magnification can be adjusted in two ways, either by zooming in and out using the external mouse wheel, or by zooming in and out using the +- in the top left corner of the screen.