



# **DWIN Web Camera Screen Development Guide**

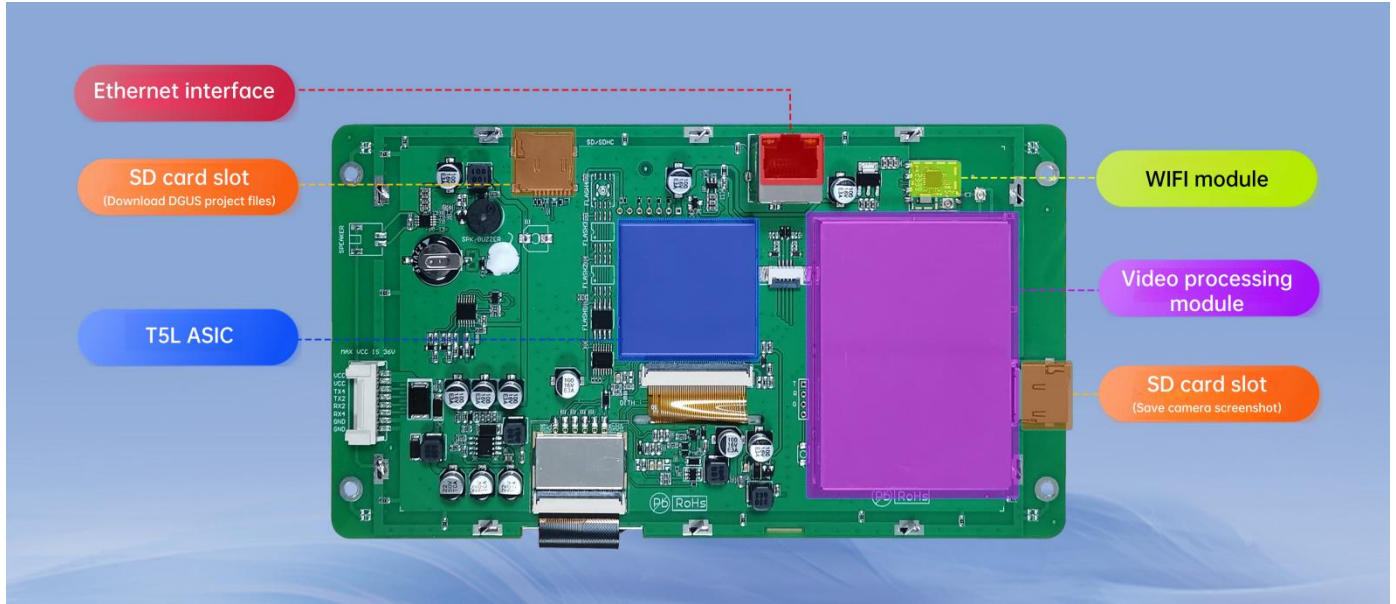
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# 1. Product Overview

## 1.1 Application Introduction

DT series web camera screen uses T5L ASIC as the main control chip, combined with a video decoding module as the co processor. Capable of achieving efficient video signal decoding processing and adapting to high-definition web cameras. Meet the needs of different industries for high-definition video display.



Hardware interface diagram

## 1.2 Product Features

- (1) Supports connecting web camera through Ethernet and WIFI (both 2.4G and 5G frequency bands are available).
- (2) Supports H.264 encoding web camera with RTSP protocol.
- (3) Supports full screen, picture in picture, mirror flip, floating icons, floating characters and other functions.
- (4) Supports customization of 4-channel cameras simultaneous display, camera screenshot saving, and MP4 format video recording function.

## 2. Product Selection

### 2.1 Web camera screen selection table

Model	Size	Resolution	LCD Type	Touch Type	Color	Network Type	Operating Temperature (°C)
DT322X220034 Z240202A	7.0	1024*600	IPS	Resistive touch	24 bit, 16.7M	WIFI	-20~70
DT322X220034 Z240202B	7.0	1024*600	IPS	Resistive touch	24 bit, 16.7M	Ethernet	-20~70
DT322X220034 Z240202C	7.0	1024*600	IPS	Resistive touch	24 bit, 16.7M	WIFI+ Ethernet	-20~70
DT322X220034 Z240202D	7.0	1024*600	IPS	No touch	24 bit, 16.7M	WIFI	-20~70
DT322X220034 Z240202E	7.0	1024*600	IPS	No touch	24 bit, 16.7M	Ethernet	-20~70
DT322X220034 Z240202F	7.0	1024*600	IPS	No touch	24 bit, 16.7M	WIFI+ Ethernet	-20~70
DT322X220034 Z240202G	7.0	1024*600	IPS	Capacitive touch	24 bit, 16.7M	WIFI	-20~70
DT322X220034 Z240202H	7.0	1024*600	IPS	Capacitive touch	24 bit, 16.7M	Ethernet	-20~70
DT322X220034 Z240202I	7.0	1024*600	IPS	Capacitive touch	24 bit, 16.7M	WIFI+ Ethernet	-20~70

Note: Their operating voltage is 12~36V.

## 3. System Variable Interface Description

Web camera screen can be controlled through the system variable interface (0x0500~0x05BF) reserved by the DGUS system.

### 3.1 System Variable Interface Definition

The functions corresponding to the addresses of various system variables used by the web camera are shown in the table below.

Variable space first address	Definition	Length (word)	Description
0x0500	camera_resolution	3	D5:4: 0x5AA5, start configuration. Clear it to zero after execution. D3:2: Represents the resolution in the X direction. D1:0: Represents the resolution in the Y direction.
0x0503	camera_mirror	1	D1: 0x5A, set the image. Clear it to zero after execution. D0: 0=not mirrored, 1=mirrored.
0x0504	camera_rotate	1	D1: 0x5A, start configuration. Clear it to zero after execution. D0: Rotation angle, 0=0°, 1=90°, 2=180°, 3=270°.
0x0505	camera_set	1	D1: 0x5A, start configuration. Clear it to zero after execution. D0: 0x00, close all; 0x01, open channel 1; 0x02, open channel 2; 0x03, open all channels.
0x0506	camera_screenshot	1	Screenshot function is not open currently.
0x0507	get_screenshot	1	Viewing screenshot function is not open currently.
0x0508	get_R11_info	1	D1: 0x5A, start query. D0: 0x00, query Ethernet status; 0x01 query WIFI status; 0x02 query SD card status.
0x0509	reserved	7	Undefined
0x0510	camera1_type	1	D1: Camera 1 Type: 0=Hikvision, 1=Dahua, 2=Xiongmai, 0xFF=Custom. D0: Main and auxiliary channel selection: 0=main channel, other=auxiliary channel.
0x0511	camera1_ip_vp	1	VP of IP address for camera 1. The content in VP is a string, for example: "192.168.1.150".
0x0512	camera1_username_vp	1	VP of user name for camera 1. The content in VP is a string, for example: "admin".
0x0513	camera1_password_vp	1	VP of password for camera 1. The content in VP is a string, for example: "dwin123456".

Variable space first address	Definition	Length (word)	Description
0x0514	camera1_custom_vp	1	VP of customize RTSP link for camera 1. The content in VP is a string, for example: "rtsp://192.168.10.166:8554/test.264".
0x0515	camera1_channel	1	D1: Channel ID, range 0-255. D0: Undefined, write 0.
0x0516	camera1_reserved	2	Reserved for future expansion.
0x0518-0x051F	camera2	8	Same as camera 1, currently not open.
0x0520-0x0527	camera3	8	Same as camera 1, currently not open.
0x0528-0x052F	camera4	8	Same as camera 1, currently not open.
0x0530-0x053F	camera_driver_info	16	Mapping location of camera driver memory. 530-539: Mapping of data regions used for external interrupt 0 and 1. 53A: Second count. 53B: If the web camera data being obtained. 53C: Counting after other states appear during playback. 53D: High byte LAN status, low byte WLAN status. 53E: High byte SD card status.
0x0540-0x055F	camera1_display_size	16	Data Transmit control. Its size is the same as the of camera 1 control.
0x0560-0x057F	camera2_display_size	16	Data Transmit control. Its size is the same as the of camera 2 control.
0x0540-0x055F	camera3_display_size	16	Data Transmit control.. Its size is the same as the of camera 3 control.
0x0560-0x057F	camera4_display_size	16	Data Transmit control. Its size is the same as the of camera 4 control.
0x0580-0x059F	camera1_display_sp	16	Icon Overlay, SP of the display control for camera 1. VP: FF00.
0x05A0-0x05BF	camera2_display_sp	16	Icon Overlay, SP of the display control for camera 2. VP: FF00.
0x0580-0x059F	camera3_display_sp	16	Icon Overlay, SP of the display control for camera 3. VP: FF00.
0x05A0-0x05BF	camera4_display_sp	16	Icon Overlay, SP of the display control for camera 4. VP: FF00.

**Note:** If you need to view saved images, you need to turn off all cameras. The web camera only needs to use the configuration of camera 1.

## 3.2 Application Instance

For example, adjusting the resolution through the system variable interface 0x0500 can be achieved by sending commands through the serial port or using DGUS "Return Key Code" control.

### (1). Serial port command.

82/83 command: 5AA5 09 82 0500 5AA5 0320 01E0

Command meaning: Frame header Command length 82 (write variable space) System variable address Start resolution processing once Resolution in X and Y direction

Note: After the serial port command is issued, the camera screen will be adjusted to 800 \* 480.

### (2). DGUS control

1.The resolution in the X and Y directions can be modified through the "Variables Input" control, and the parameter settings refer to the following figure.

X-direction resolution input

Y-direction resolution input

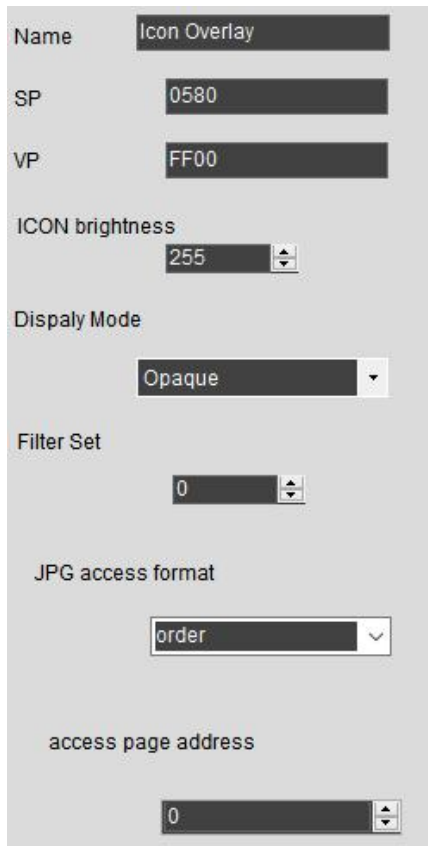
2.Making the resolution effective can be achieved through the "Return Key Code" control, parameter settings are shown in the following figure.

## 4. Camera Interface DGUS Development

The DGUS project for simulating camera interface requires the use of two controls: "Data transmit" and "Icon Overlay".

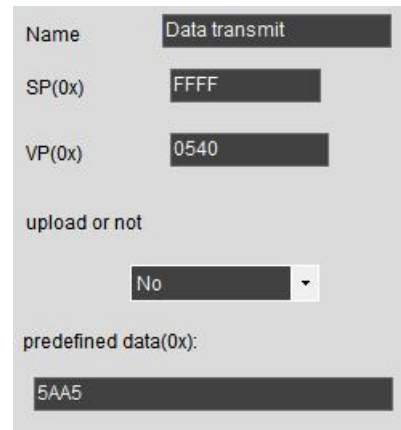


Taking camera 1 setting as an example, Overlay and place together, and refer to the following content to set the control parameters. The predefined data "5AA5" in "Data transmit" control means that the camera will automatically open upon entering the page, while the rest of the values are not automatically turned on. It is noted that the display area size of the two controls should be consistent.



Name: Icon Overlay  
SP: 0580  
VP: FF00  
ICON brightness: 255  
Display Mode: Opaque  
Filter Set: 0  
JPG access format: order  
access page address: 0

Icon overlay



Name: Data transmit  
SP(0x): FFFF  
VP(0x): 0540  
upload or not: No  
predefined data(0x): 5AA5

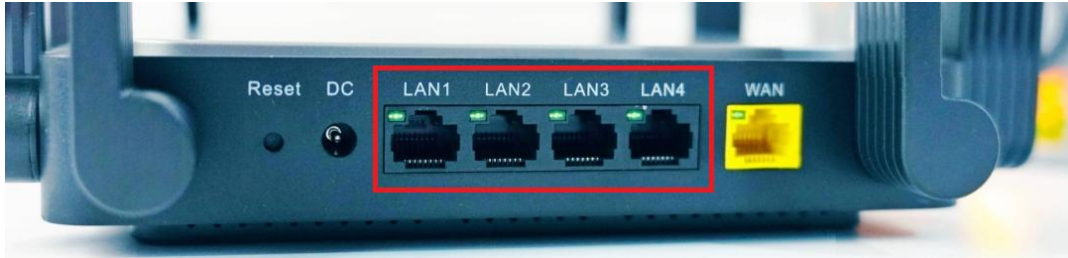
Data transmit



## 5. Common Questions

### 1. Unable to display camera screen after connecting to router?

Check if the network cable connection is correct, and be careful not to use the World Wide Web interface (the interface shown in the red box in the figure below can be used).



### 2. Can I use a switch instead of a router?

If it is a switch with automatic IP address allocation function, the router can be omitted.

## 6. Revision Records

Version	Revise Date	Content	Editor
1.0	2024-08-08	First Edition	Xu Ying

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