

Vzense ConfigTool User Guide



Windows

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Vzense

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1 Overview

Welcome to the Vzense UpgradeTool User Guide. UpgradeTool is a graphical Windows-based tool developed for Vzense TOF Cameras including DCAM710, DCAM550P, DCAM550U, DCAM560CPRO, DCAM560CLITE, (herein referred to as a *camera module*). It can be used to pre-configure default working mode while powered up.

The tool supports two type of product interface, USB and Ethernet. Please do setup the hardware correctly.

USB interface Product: DCAM710, DCAM550-U;

Ethernet interface Product: DCAM550-P, DCAM560CPRO, DCAM560CLITE;

Below is an example of the configure tool UI;

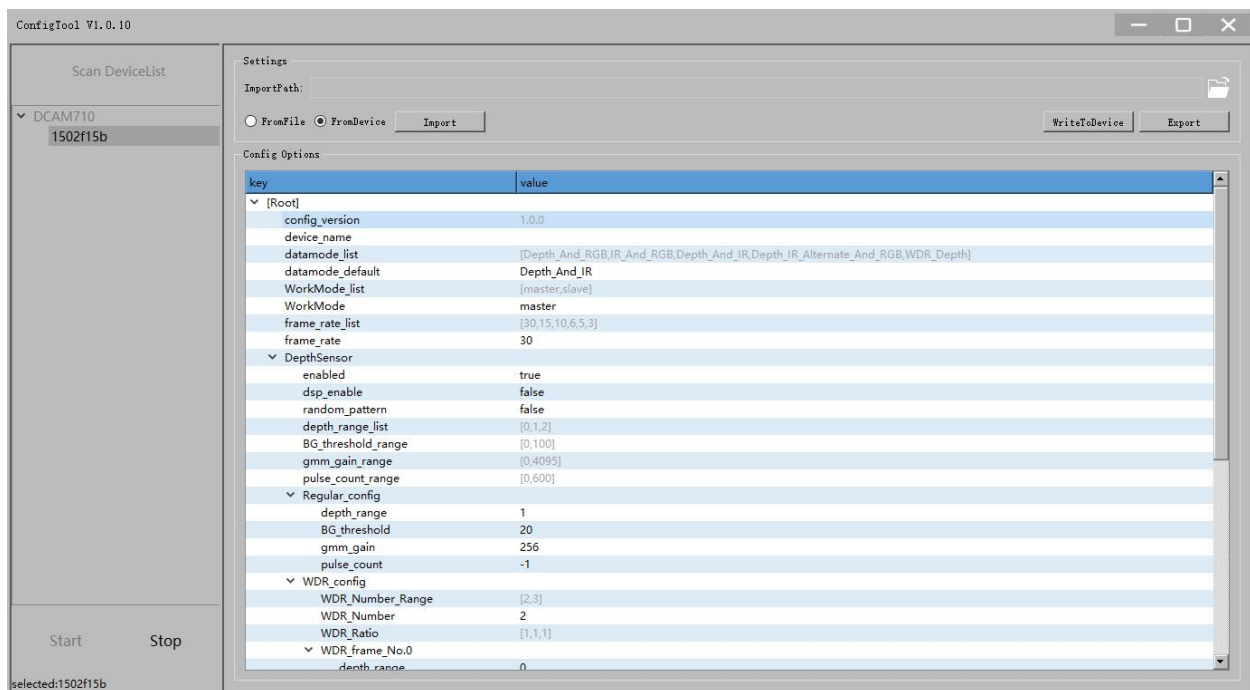


Figure 1 - VzenseConfigTool.

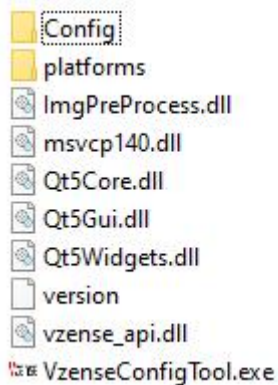
2 Package Structure

Download the VzenseUpgradeTool from below link:

China: <https://gitee.com/Vzense/VzenseConfigTool>

Oversea: <https://github.com/Vzense/VzenseConfigTool>

The ConfigTool package for Windows contains the following notable directories and files:



3 Requirements

ConfigTool has the following requirements:

Supported Operating Systems: Windows 7 32/64 bit, Windows 10 32/64 bit

RAM: A minimum of 4GB

4 Setting up the Upgrade Environment

4.1 Hardware Installation

Connect the camera module to a PC using a USB cable or a Network cable as shown in Figure 2:

Please do make sure ONLY ONE Vzense product is connected to the PC while configuring the product.

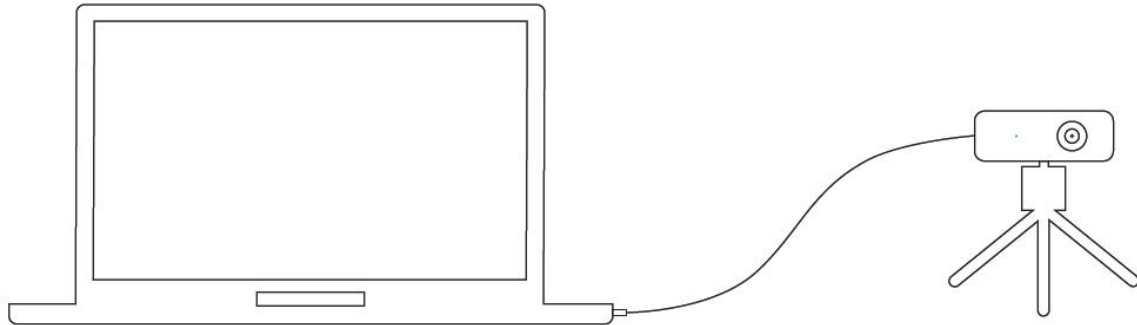


Figure 2 - Hardware installation.

4.1.1 USB Interface Product Setup(Only for DCAM710 and DCAM550U)

DCAM710, DCAM550-U products support configuration by USB interface.

- 1) Connect the camera module to PC USB interface through USB cable.
- 2) In Windows, when the camera module is successfully connected, it will pop up the notice of the device driver installation. After the driver is auto-installed successfully, it will show the **Vzense TOF Camera** device in Windows Device Manger.

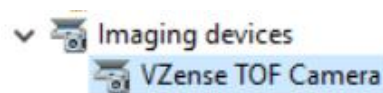


Figure 3 Vzense TOF Camera

4.1.2 Ethernet Product Setup(Only for DCAM550P,DCAM560CPRO and DCAM560CLITE)

DCAM550-P, DCAM560CPRO, DCAM560CLITE products support configuration by Ethernet interface.

The product shall be connected to the windows PC by Ethernet, the IP address of the product could be either a fixed IP address or DHCP by AP.

Please MUST set the IP address of the product and window PC at the same IP segment.

1. Fixed address

The fixed address connection can be directly connected to the camera and the computer, or it can be configured to be used in the same network segment.

Direct connection: one end is connected to the camera, and the other end is connected to the network cable interface of the PC host. The default IP of the camera is 192.168.1.101. On the PC side, set the subnet mask of "local connection" to 255.255.255.0, and the IP address to the same network segment (such as 192.168.1.100).

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 192 . 168 . 1 . 100

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses

Preferred DNS server: . . .

Alternate DNS server: . . .

☐ Validate settings upon exit

Advanced...

OK Cancel

Figure 3.1 Direct connection

2. DHCP

For the DHCP connection mode, the camera needs to be connected to the router with DHCP enabled, and the PC in the same LAN is used for connection. It is recommended to set the "local connection" of the PC to obtain the IP address automatically.

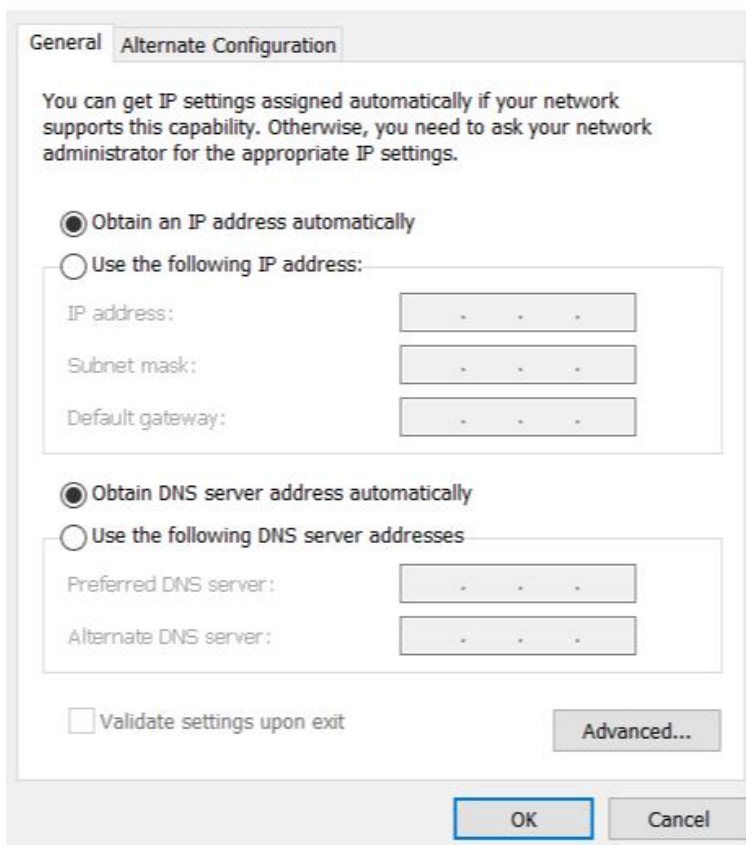


Figure 3.2 DHCP

Note:

1. Please do always allow access through the firewall;

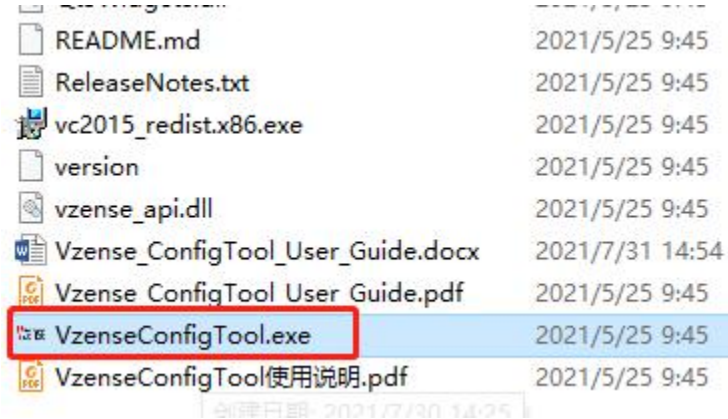


Figure 3.3 firewall setting

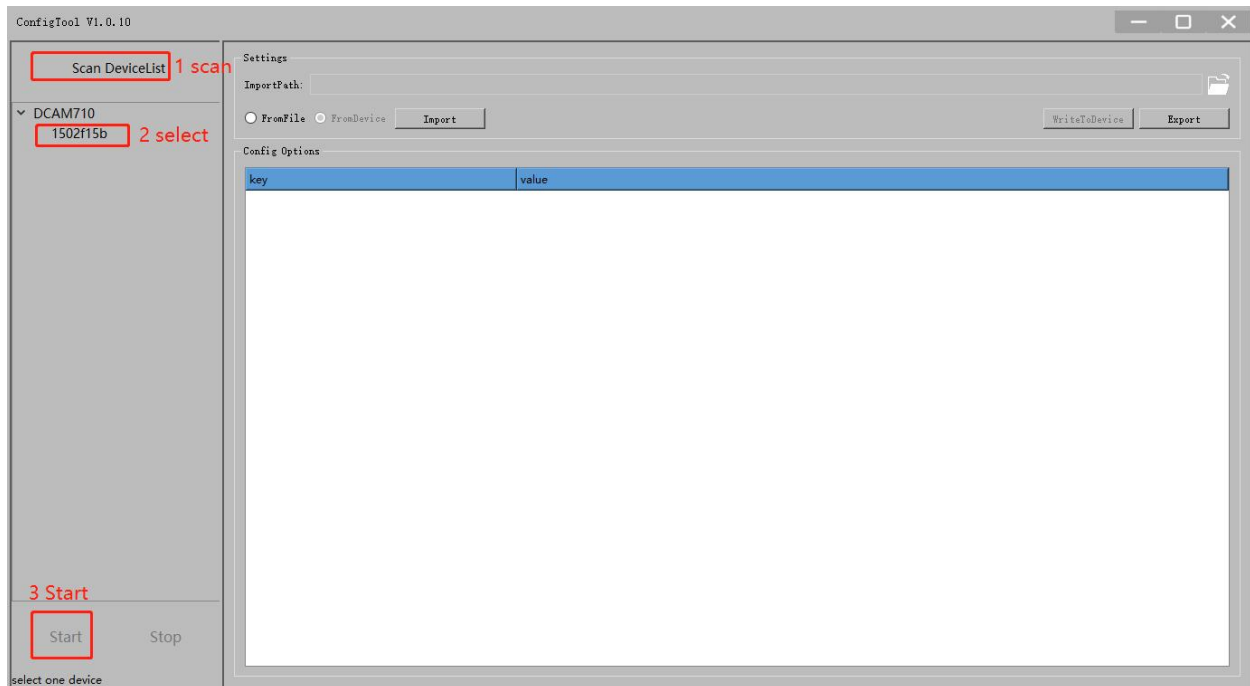
5 ConfigTool Settings and Functionality

The following subsections describe the settings and functionality of ConfigTool.

5.1 Launch the VzenseConfigTool.exe



5.2 Find the device



Then it shows the default setting of the product

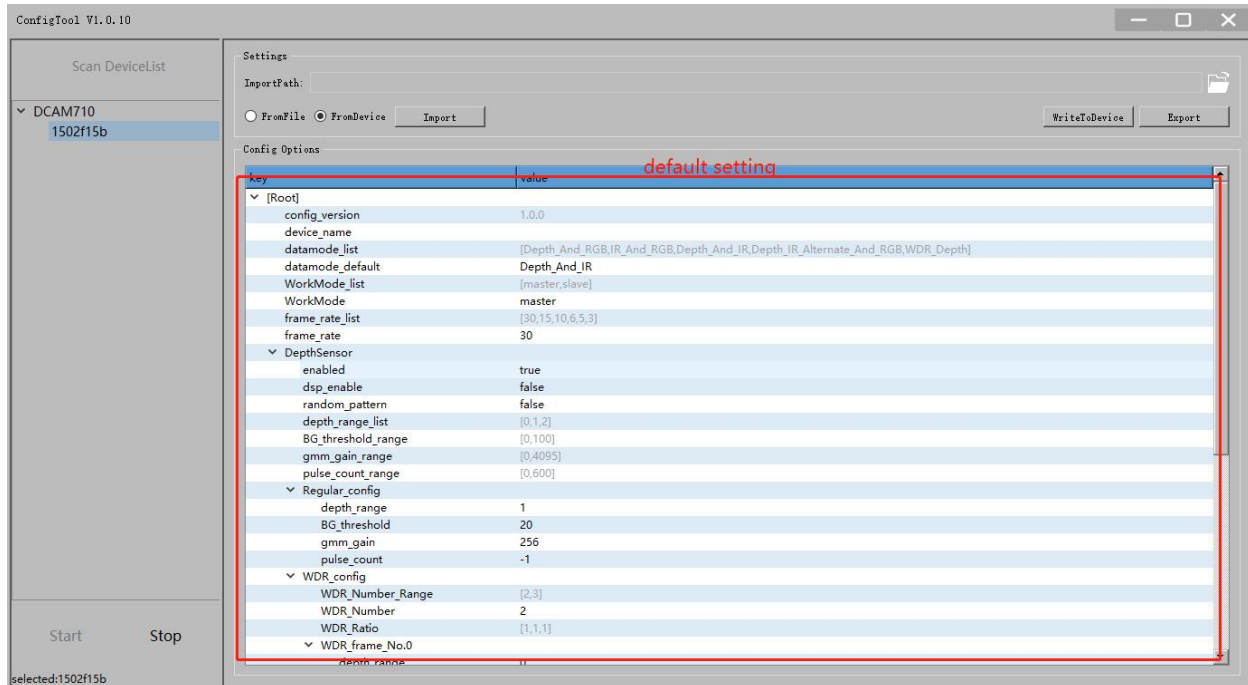


Figure 2 - Device List .

5.3 Import Configurations

ConfigTool will auto import the configurations from device and show it in the edit area. User also can import the configurations from file. The detail is in the Chapter 7.

5.4 Configurations

5.4.1 Version number & device alias

config_version	1.0.0
device_name	

All DCAM series products do not set the camera alias, users can consider whether to set the alias according to the actual situation.

5.4.2 datamode_default

datamode_list	[Depth_And_RGB,IR_And_RGB,Depth_And_IR,Depth_IR_Alternate_And_RGB,WDR_Depth]
datamode_default	Depth_And_IR Type in the datamode in the above list

Datamode_default refers to the default data mode of the product. You shall type in one datamode in the list, case sensitive.

Datamode List:

Depth_And_RGB	By default, the product outputs both depth and RGB image. (DCAM710 only)
IR_And_RGB	By default, the product outputs both IR and RGB image. (DCAM710 only)

Depth_And_IR	By default, the product outputs both depth and IR image.
Depth_IR_Alternate_And_RGB	The product outputs depth, IR and RGB image, but the depth and IR frame rate is half of the "frame_rate" setting. (DCAM710 only)
WDR_Depth	By default, the product outputs both depth in WDR mode. DCAM710 will output RGB along with the WDR depth; Please refer to the application note of WDR function;

Note:

The above table is applicable to DCAM710, DCAM560CPRO and DCAM560CLITE cameras. DCAM550 series cameras do not support output RGB images.

The datamode_default setting is limited to the mode in the data list, which cannot be changed.

5.4.3 WorkMode setting

WorkMode_list	[master,slave]
WorkMode	master Type in master or slave

Configure the product at either master or slave mode; You shall type in one workmode in the list, case sensitive.

WorkMode_List:

master	The product works at master mode, or free-running mode.
slave	The product works at slave mode or snapshot mode, which require external trigger signal for each capture. Please refer to the application note of SLAVE Trigger function.

5.4.4 Frame rate setting

frame_rate_list	[30,15,10,6,5,3]
frame_rate	30 type in the frame rate

Configure the frame rate of the product, you shall type in the number of frame rate.

DCAM710 can work at 30,15,10,6,5,3Hz frame rate;

DCAM550-U, DCAM550-P can work at any frame rate from 3 to 30Hz.

5.4.5 Depth Sensor Setting

DepthSensor	
enabled	true Must NOT change
random_pattern	true
depth_range_list	[0,1,2,5]
BG_threshold_range	[0,100]
gmm_gain_range	[0,4095]
pulse_count_range	[0,600]
Regular_config	
depth_range	0
BG_threshold	20
gmm_gain	256
pulse_count	-1
confidence_threshold	-1 Suggest NOT to change

- **Depth range** relates to the default depth range of the product, you shall type in one number in the above depth_range_list, case sensitive;
- **BG_threshold** refers to the default confidence threshold of the product, from 0 to 100;
- **Gmm_gain** refer to the brightness gain of the IR image, from 0 to 4095;
- **Pulse_count** refers to the laser gating time, from 0 to 600. -1 means the default value of calibration, suggest not to change it without support of Vzense.
- **Confidence threshold** refer to the default confidence threshold of the product, from 0 to 1000.

5.4.6 WDR configuration

WDR configuration works only when the “datamode_default” is “WDR_Depth” mode;

Please read the application note of WDR function firstly.

WDR_config		
WDR_Number_Range	[2,3]	The depth_range range of numbers that make up the WDR
WDR_Number	2	Depth_range number of current WDR components
WDR_Ratio	[1,1,1]	
WDR_frame_No.0		
depth_range	0	
BG_threshold	20	
gmm_gain	256	
pulse_count	-1	
confidence_threshold	-1	
WDR_frame_No.1		
depth_range	1	
BG_threshold	20	
gmm_gain	256	
pulse_count	-1	
confidence_threshold	-1	
WDR_frame_No.2		
depth_range	2	
BG_threshold	20	
gmm_gain	256	
pulse_count	-1	
confidence threshold	-1	

WDR_Number: means how many ranges in the WDR mode, either 2 or 3.

WDR Number is 2	2 ranges WDR mode, WDR_frame_No.0 and WDR_frame_No.1,
WDR Number is 3	3 ranges WDR mode, WDR_frame_No.0, WDR_frame_No.1 and WDR_frame_No.2

WDR_frame_No.0,1,2 means the setting of each range in WDR mode;

WDR_config	
WDR_Number_Range	[2,3]
WDR_Number	2
WDR_Ratio	[1,1,1]
WDR_frame_No.0	
depth_range	0
BG_threshold	20
gmm_gain	256
pulse_count	-1
confidence_threshold	-1
WDR_frame_No.1	
depth_range	1
BG_threshold	20
gmm_gain	256
pulse_count	-1
confidence_threshold	-1
WDR_frame_No.2	
depth_range	2
BG_threshold	20
gmm_gain	256
pulse_count	-1
confidence_threshold	-1

5.4.7 Confidence filter

confidence_filter_enabled	false
confidence_threshold_range	[0,1000]

Confidence_filter_enabled: confidence filter switch. Function to filter out low reflectivity data.

Confidence_threshold_range: indicates the confidence threshold range.

5.4.8 RGB sensor setting, only for DCAM710

RGBSensor	
enabled	RGB images enable or disabled true
resolution_list	[1920_1080_1280_720_640_480_640_360] List of RGB supported
resolution_default	640_360 The resolution of the camera's current image

resolution_default refers to the RGB resolution, you shall type in one of the resolution_list

1920_1080

1280_720

640_480

640_360

Note: The RGBSensor configuration item supports only DCAM710, DCAM560CPRO, and DCAM560CLITE. The RGBSensor configuration item will not be displayed when the DCAM550 series camera is opened.

RGBSensor		
brightness_default	0	The current brightness value
brightness_range	[-64,64]	RGB image brightness range
enabled	true	
exposure_time_default	5	Current exposure time
exposure_time_range	[1,30]	Exposure time range
resolution_default	1600_1200	
resolution_list	[1600_1200,800_600,640_480]	

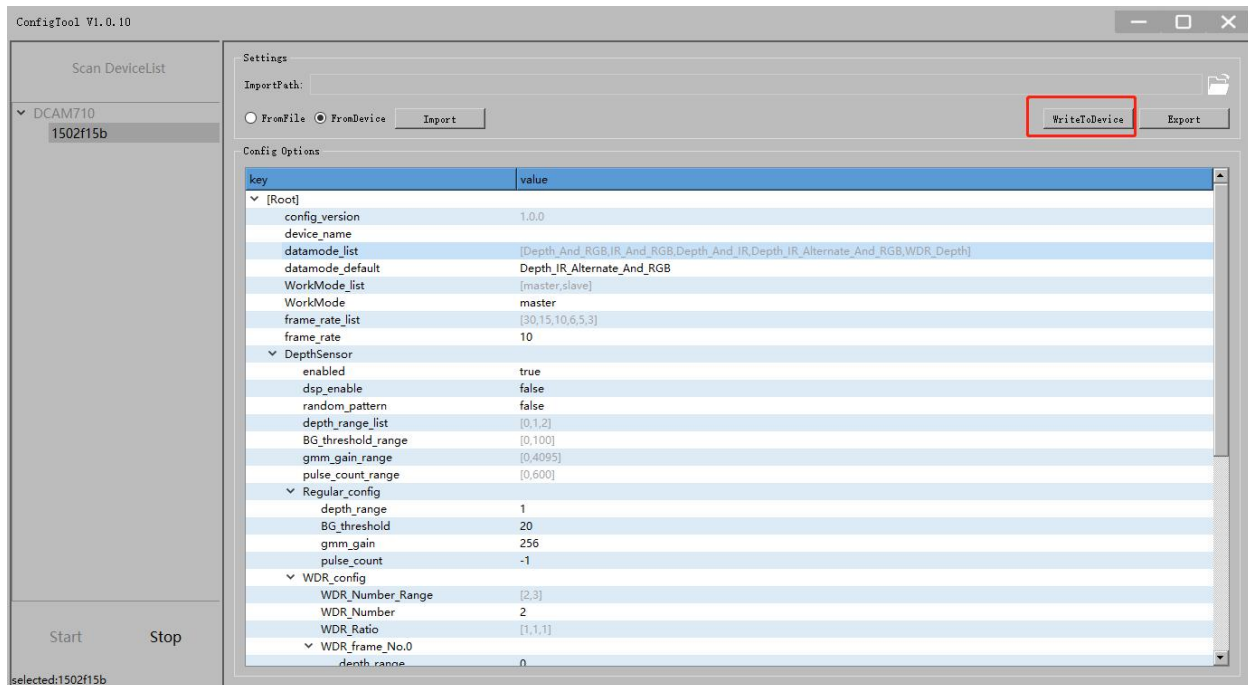
Note: Exposure time and brightness Settings are only available on DCAM560CPRO and DCAM560CLITE, but not on other cameras.

5.4.9 The network configuration(Only for DCAM550P,DCAM550E,DCAM560CPRO and DCAM560CLITE)

Network		
DHCP	false	Enable/disable the routing mode
ip_addr	192.168.1.101	Default IP address of the camera
subnetmask	255.255.255.0	default subnet mask

The IP address of the camera on the Ethernet interface can be changed.

6 Write the updated configuration into device



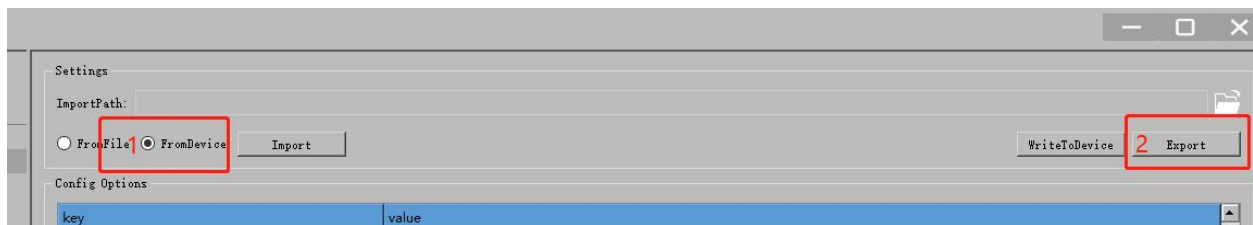
Click "WriteToDevice". The following dialog box is displayed. Click "Yes".



7 Import and Export from file

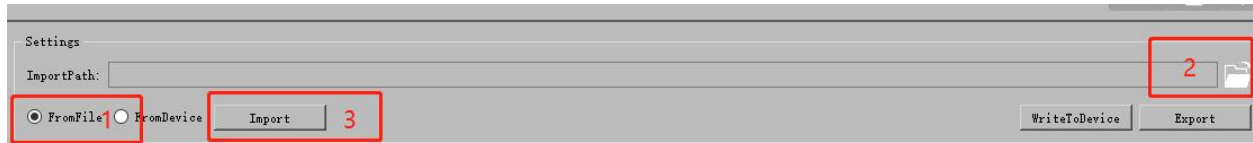
User can export the configuration into a .json file or import that from .json file.

Export from file:



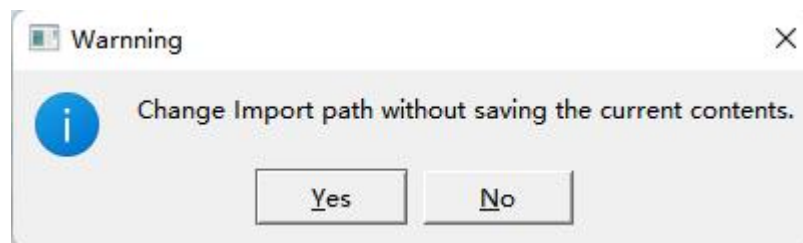
Click "Export". In the file box that is displayed, select the path to Export the configuration file, and click "Save" to Save the configuration file.

Import from file:



Click on "FromFile" and a pop-up window will appear as shown below. Please click "Yes" to continue using the import function.

"Import" displays the parameters of the imported file.



8 FAQ

Q1: About "The Other Instance is Running!"

A1: "The Other Instance is Running!" represents that the existing ConfigTool program is running. You can restart the ConfigTool after closing the program. If this prompt still appears after closing, check the background process to close VzenseConfigTool.exe directly.

Q2: Why cannot I search for the camera using ConfigTool?

A2: Maybe the program is blocked by the firewall. Disable the firewall and run ConfigTool. Alternatively, change the path of the ConfigTool and run it again. In the dialog box that is displayed, click Allow to execute.