VC Smart Camera Demo Users' Guide

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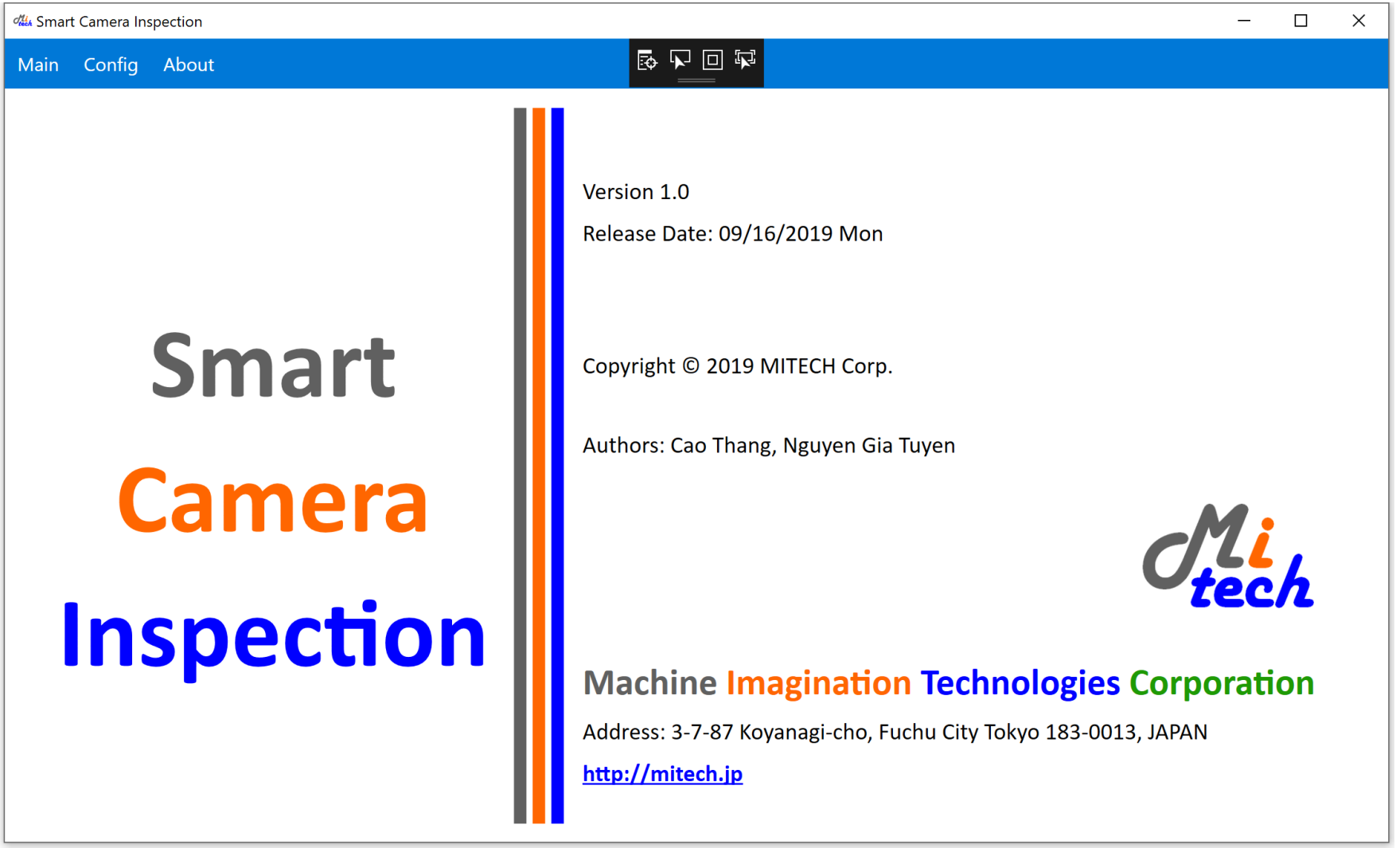
VC Smart Camera Demo



About This Software

- This is Smart Camera Demo, written by MITECH Corp., for evaluating VC NanoZ Smart Camera and VC Nano 3D Camera
- Depending on version, this user guide may be a little different from your software
- For more information and for developing smart camera software in practical application, please feel free to contact us at http://mitech.jp/
- Thank you for using this software

1. Copy Program to Camera and PC

- Camera Side
  - Copy *01A_DemoLinux* to a folder, for example */home/user/mitech/*
  - Set program as executable

    chmod +x *01A_DemoLinux*
  - Run the program

    cd /home/user/mitech/

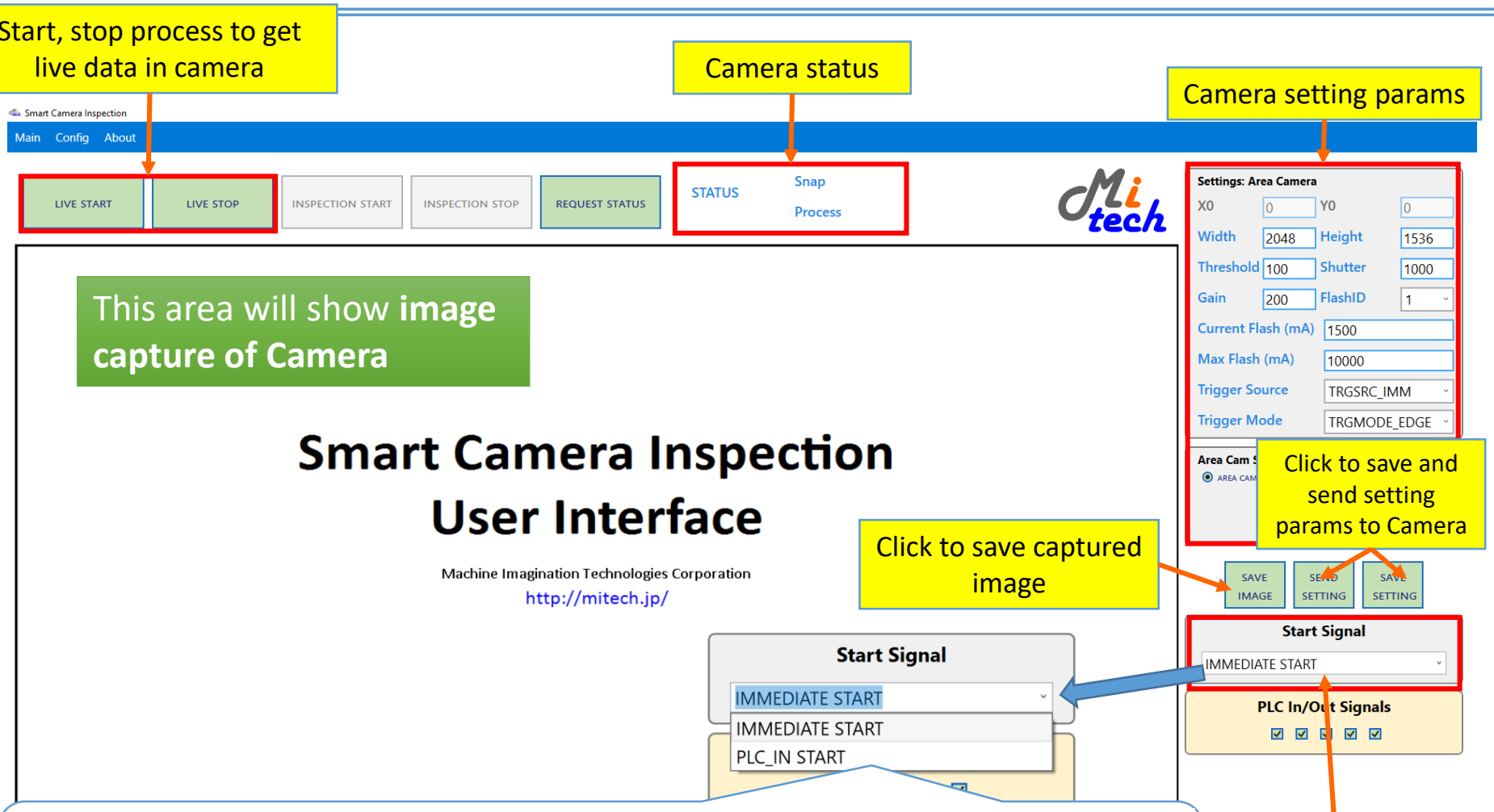
    ./01A_DemoLinux

```
22:15:42[root@VC-Z] ~
#cd /home/user/mitech

22:15:56[root@VC-Z] /home/user/mitech
#./01A_DemoLinux
```

- Windows Side
  - Copy *01B_DemoWindows* to a folder, for example *C:¥mitech*
  - Run the program
  - Set suitable parameters such as image size, shutter, gain, ...
  - Enjoy testing your camera with this program

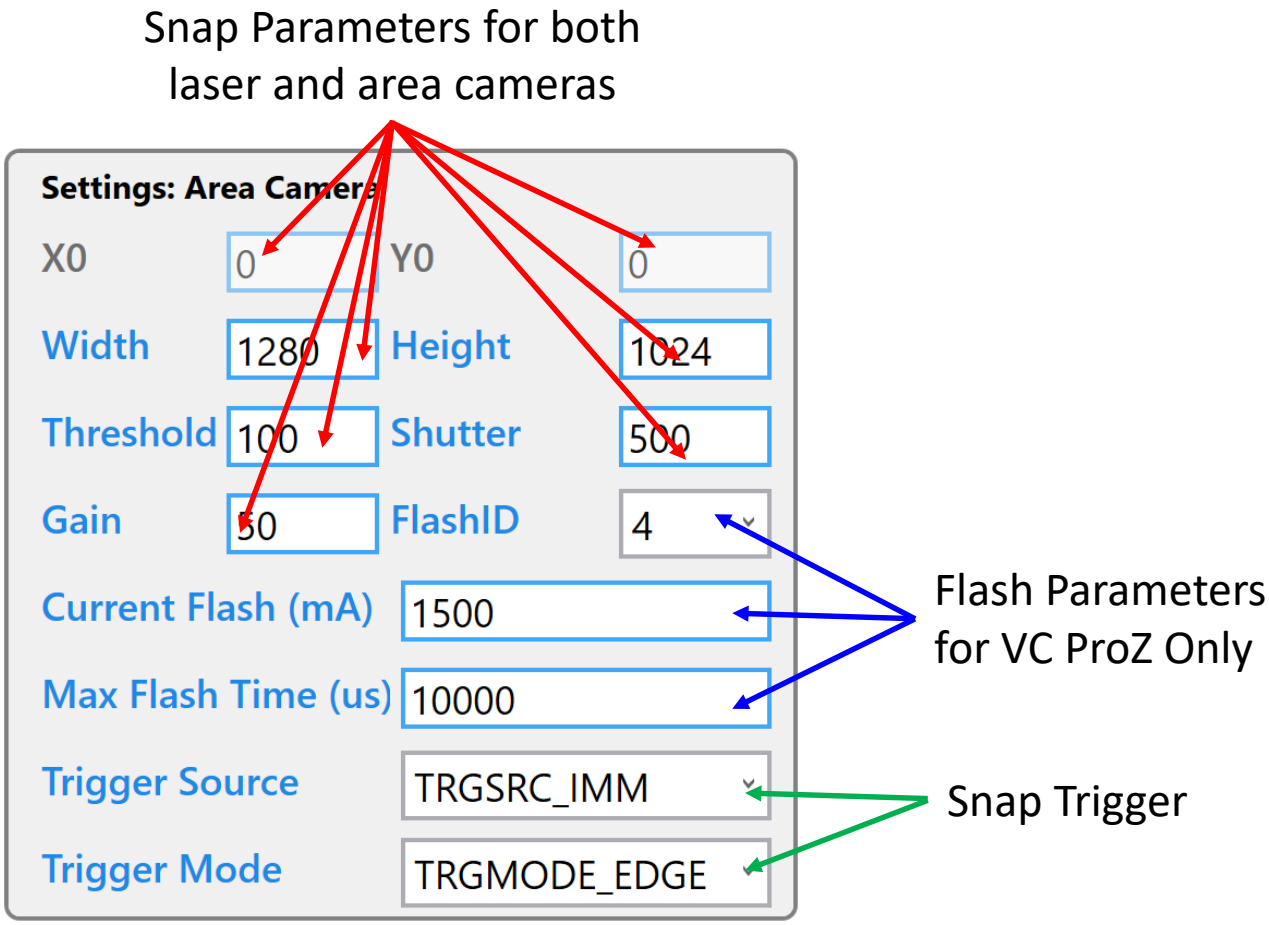
2. PC Client Application: Interface (Main Page for Area Camera)



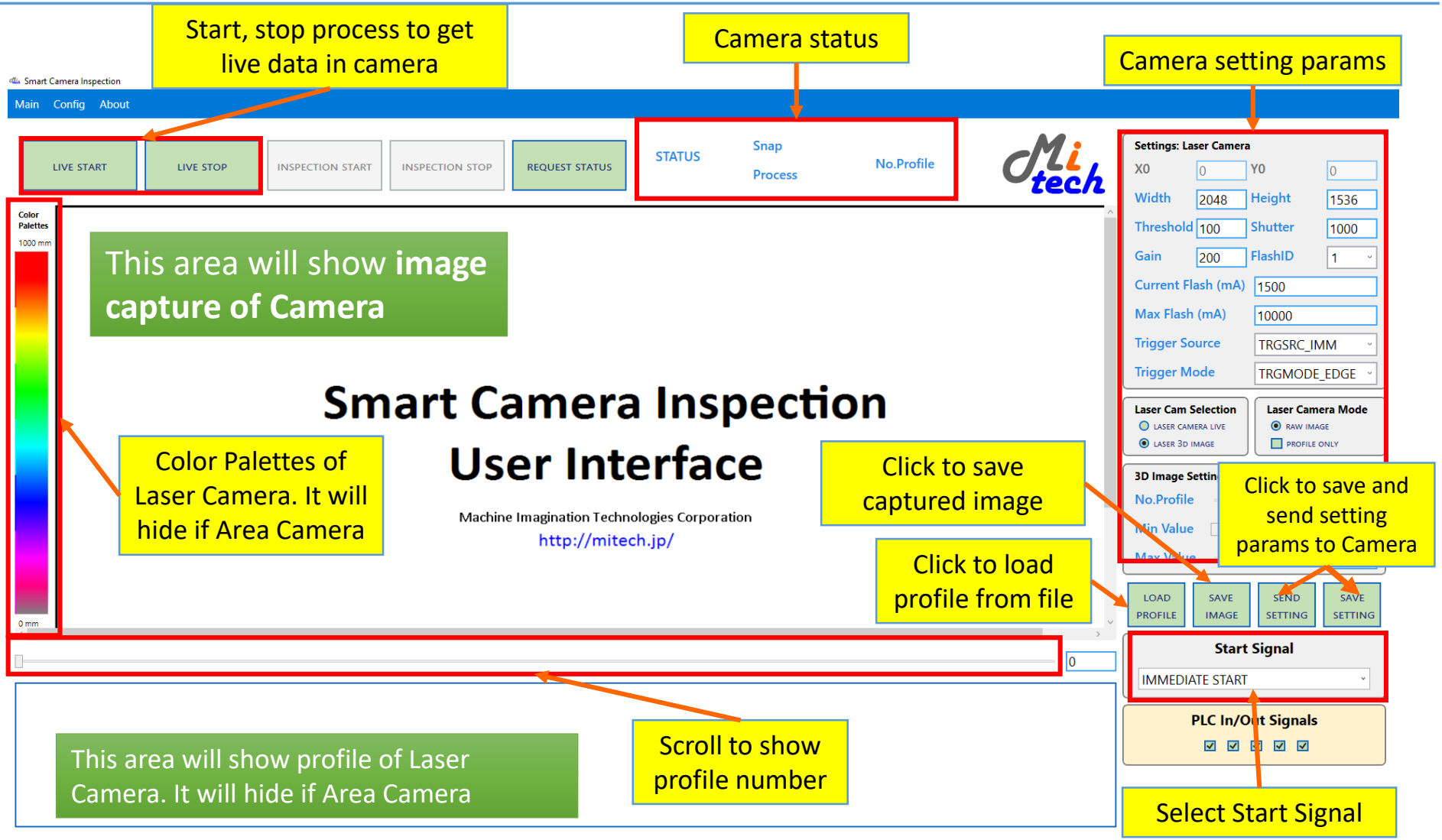
- Start Signal is PLC In signal for starting an inspection
  - IMMEDIATE START: Start without PLC In
  - PLC_IN START: Start with “INP 0” Signal (for both VC NanoZ and VC NanoZ 3D)

2. PC Client Application: Interface (Main Page for Area Camera)

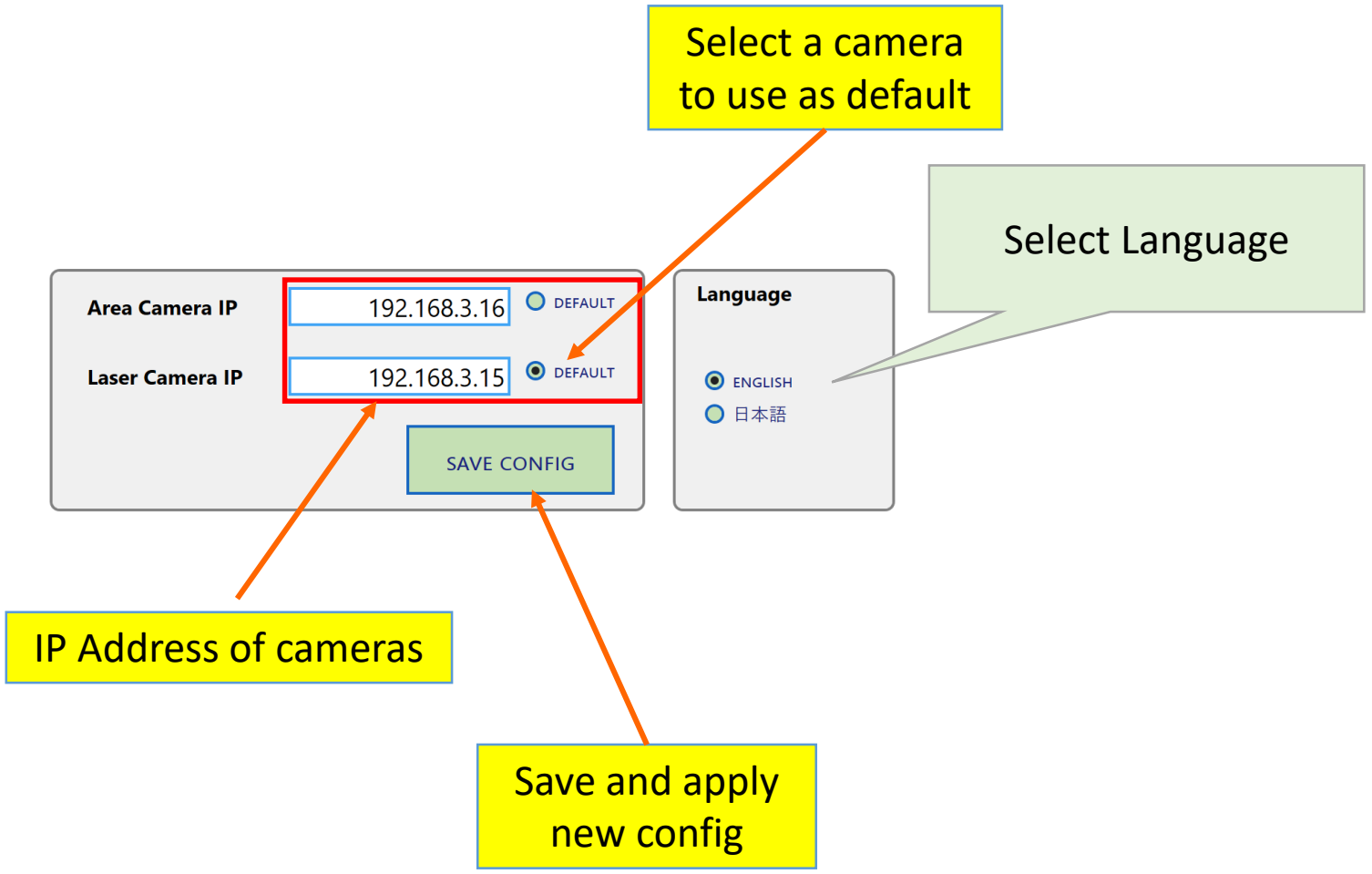
- Snap Parameters



2. PC Client Application: Interface (Main Page for Laser Camera)

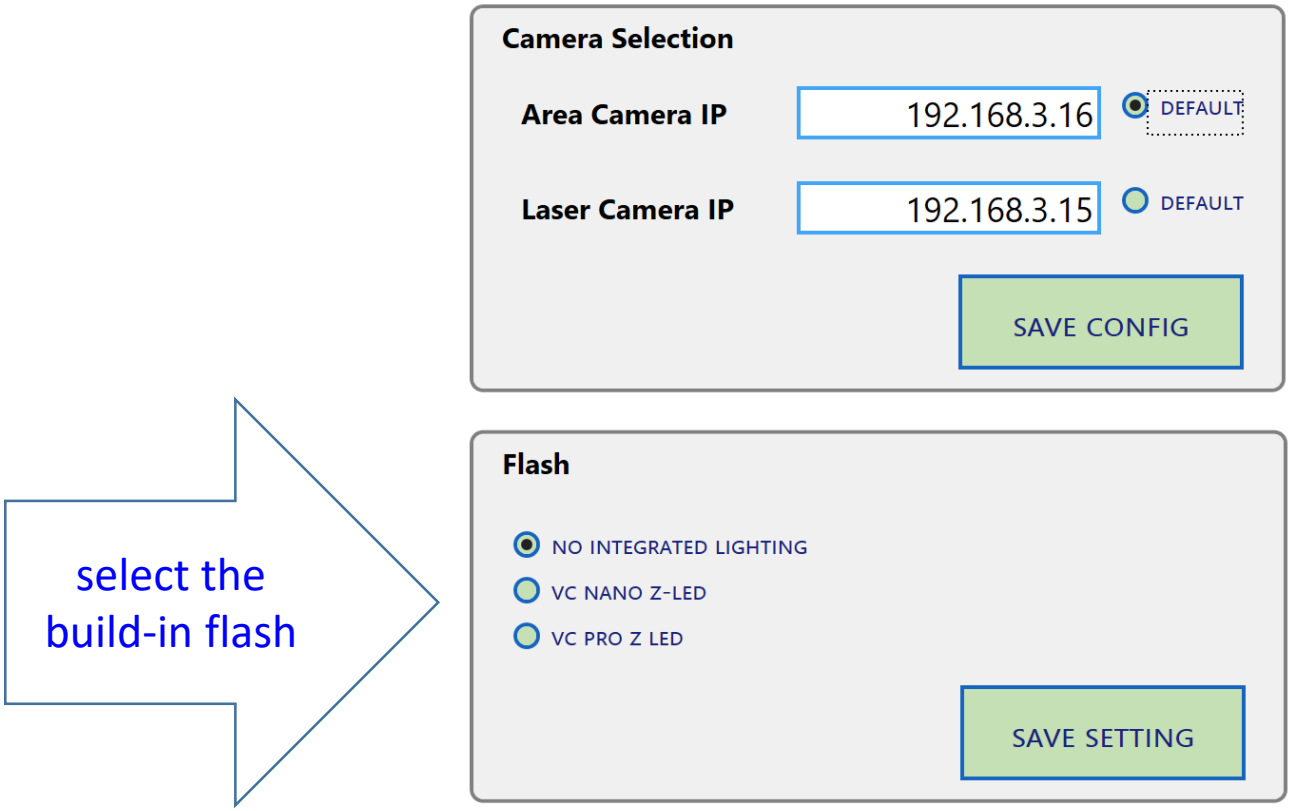


2. PC Client Application: Interface (Configuration Page)



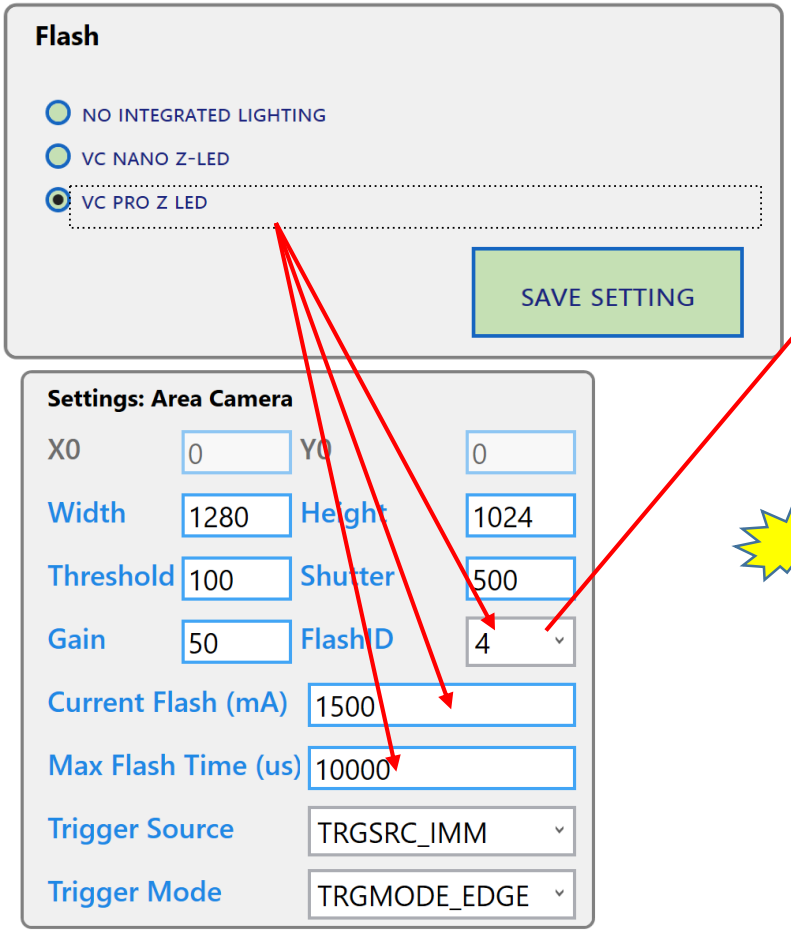
2. PC Client Application: Interface (Configuration Page)

- If choosing Area Camera, you can select the build-in flash



2. PC Client Application: Interface (Configuration Page)

- Parameters for Flash of the VC-ProZ is in the Main Page

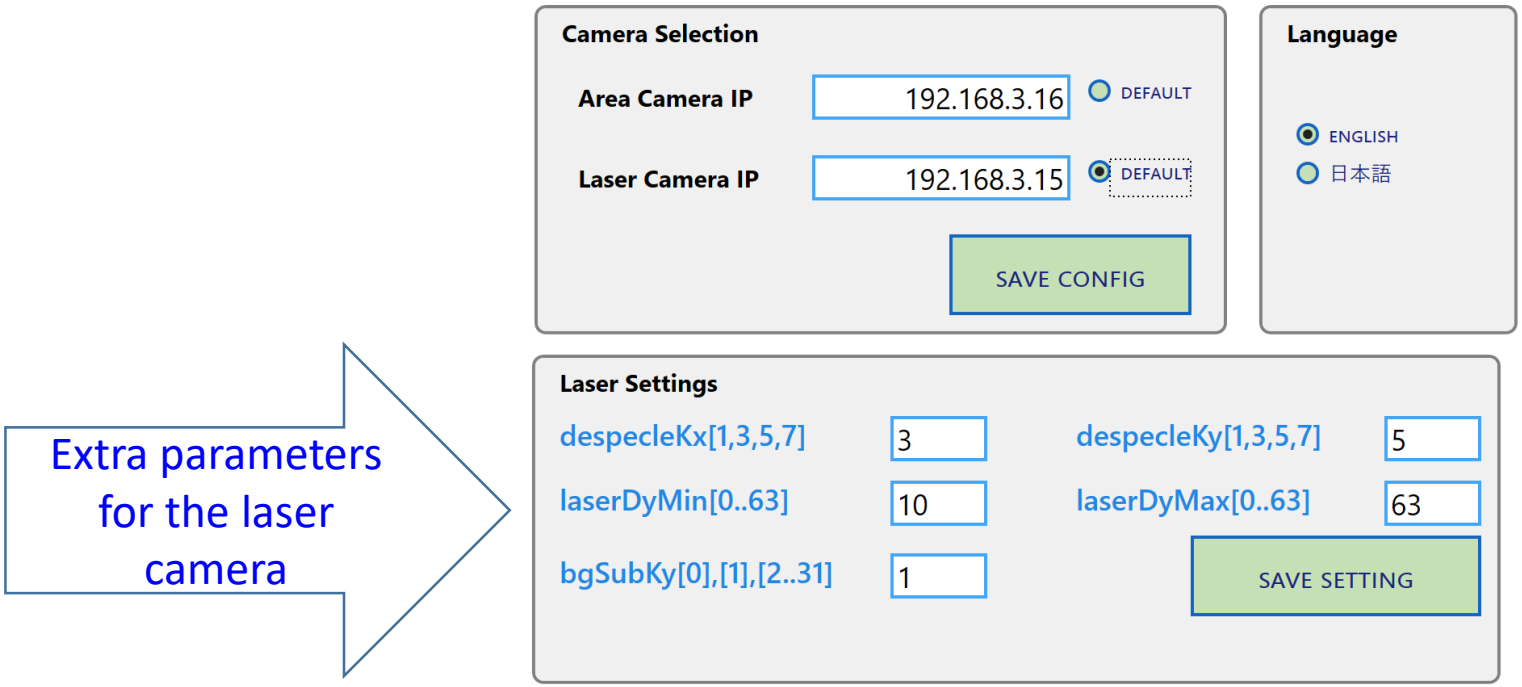


Flash ID	Camera Flash
0	$FLASH_0$/TrigOut
1	$FLASH_1$
2	$FLASH_2$
3	$FLASH_3$
4	$FLASH_2$ & $FLASH_3$

For FlashID, Current Flash (mA), Max Flash (time in µs), please refer https://www.vision-components.com/fileadmin/external/documentation/hardware/VC_pro_Z/index.html#gpios

2. PC Client Application: Interface (Configuration Page)

- If choosing Laser Camera, you can select some extra parameters for the laser camera



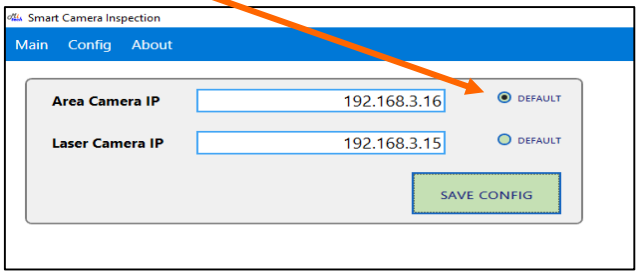
For the extra parameters for the laser, please refer https://www.vision-components.com/fileadmin/external/documentation/software/lib/libvclinux/latest/html/a00009.html

3. Area Camera Flow

PC Client

Area Camera

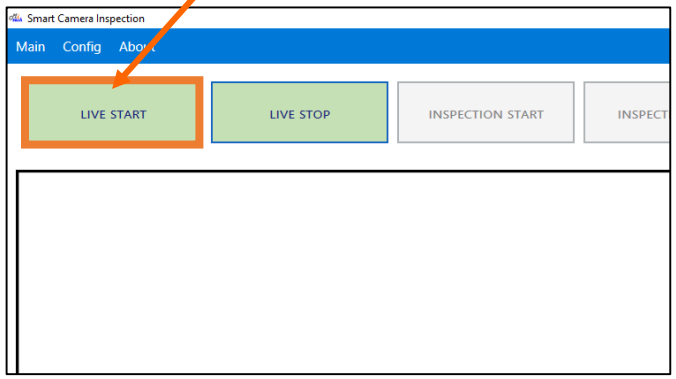
1. *Enter IP and select Default on Area Camera then Click "SAVE CONFIG"*



2. *Start camera program*

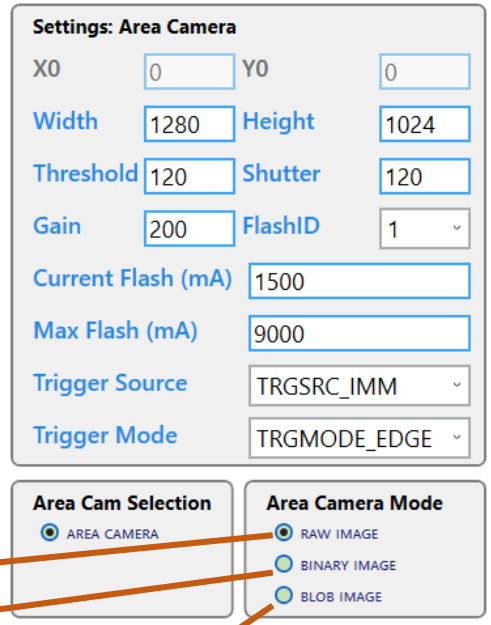
$ ./01A_DemoLinux

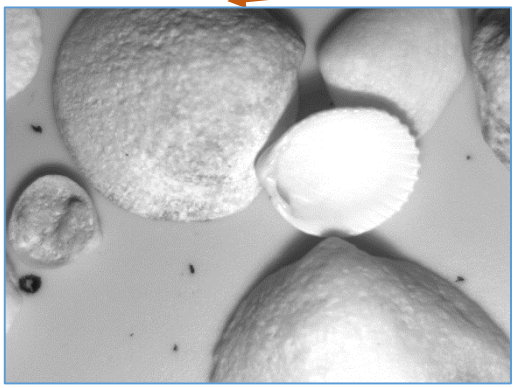
3. *Click "LIVE START" to get the image on Area camera*



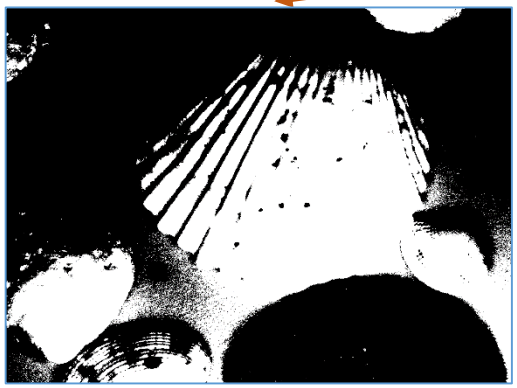
3. Area Camera Setting

- Area Camera is **VC_nanoZxx**
  - Width and height should be set correctly
  - Other parameters also should be set correctly
- Mode of Area Camera
  - **Raw image**: get a raw image of the camera and display
  - **Binary image**: get a binary image of the camera and display
  - **Blob image**: get blobs of image, image data of camera and display
- Image results

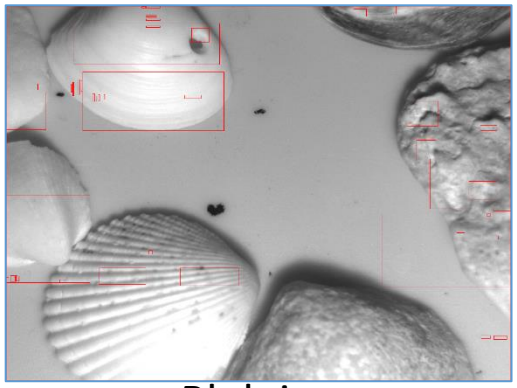




Raw image



Binary image

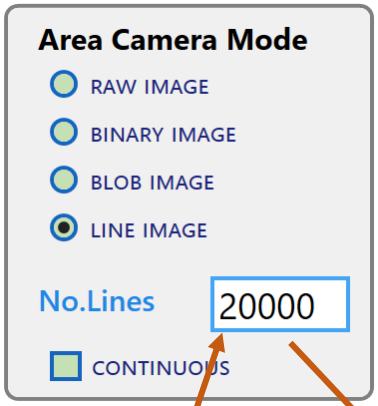


Blob image

3. Area Camera

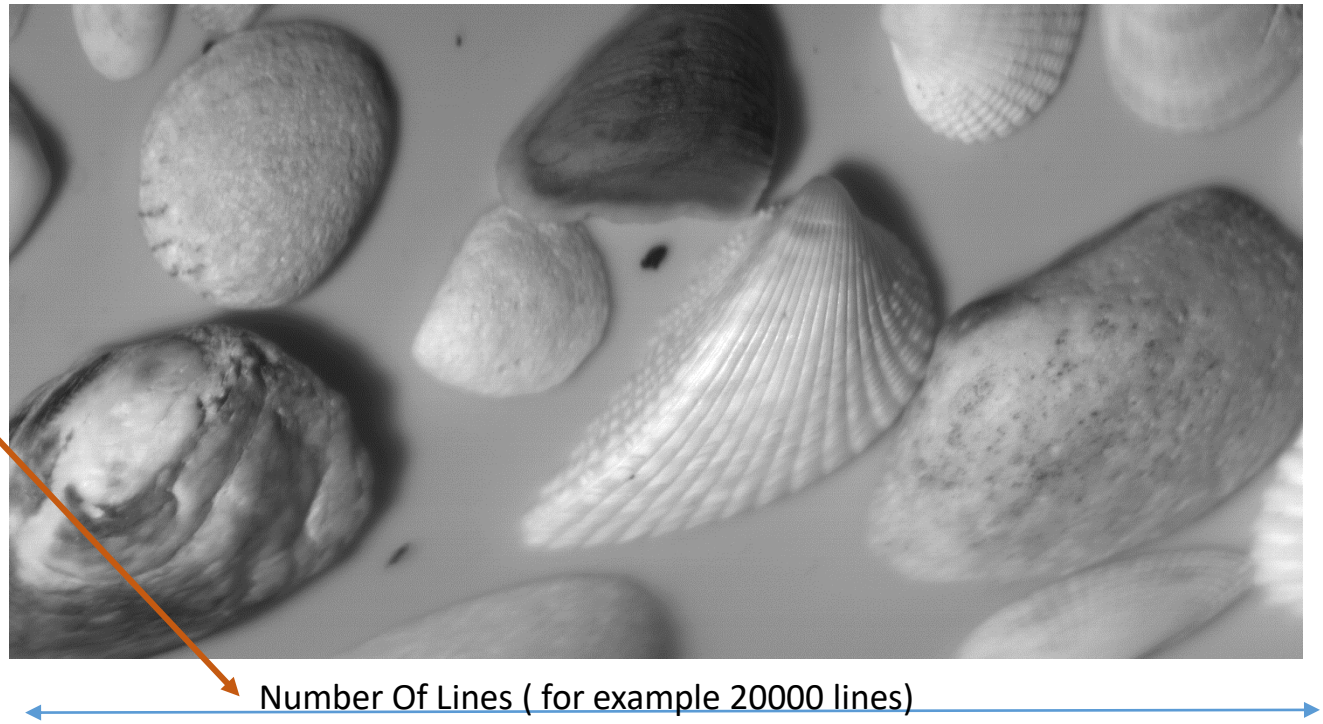
Snap Single Line as a Line Camera

- Using camera, you can snap a single line similar to a line camera
- The Line Width is camera image width
- You can specify Number of Lines (for example 20000 lines), not that this number is limited due to buffer space



Select “LINE IMAGE” and number of desired lines

LINE IMAGE will look like this

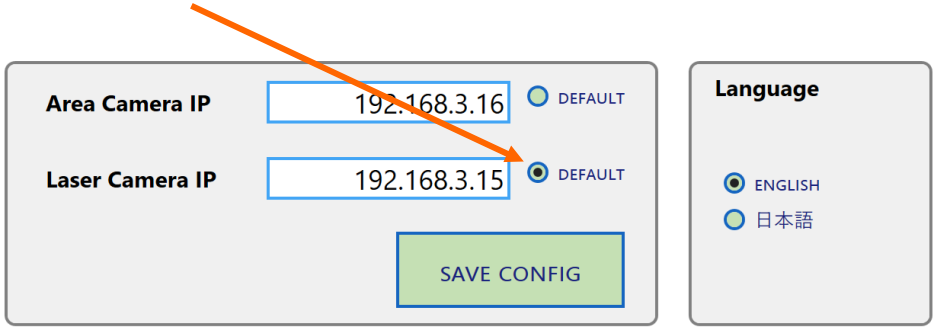


4. Laser Camera flow

PC Client

Laser Camera

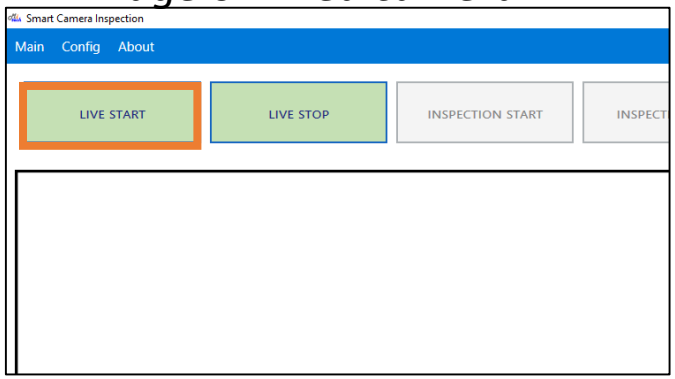
1. *Enter IP and select Default on Laser Camera then Click "SAVE CONFIG"*



2. *Start camera program*

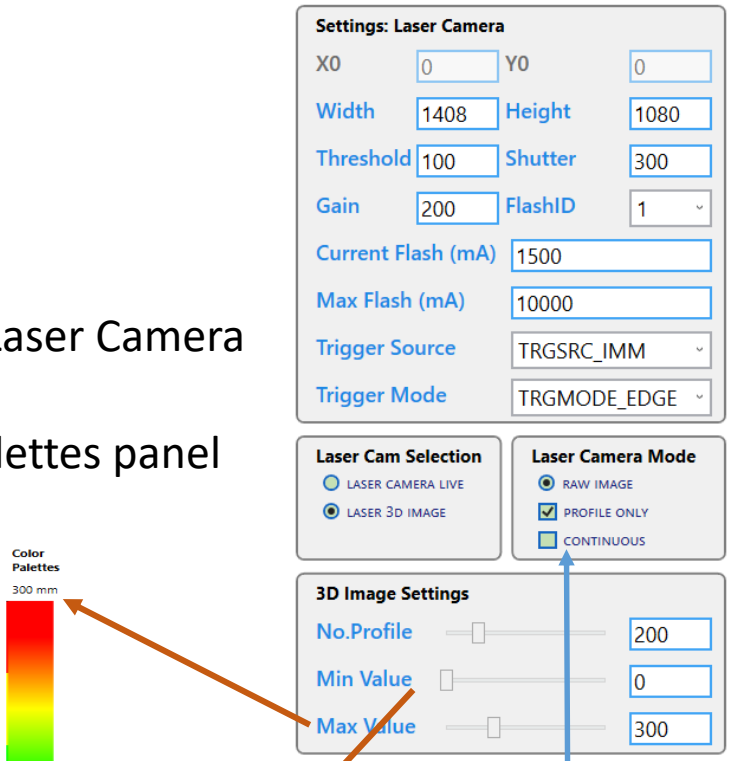
$ ./01A_DemoLinux

3. *Click "LIVE START" to get the image on Area camera*



4. Laser Camera Setting

- Laser Camera is **VC_nano_3D_Z**
  - Width and height should be set correctly
  - Other parameters also should be set correctly
- 3D Image Settings
  - It only show if you select “Laser 3D Image” in Laser Camera Selection
  - Max, min value are max, min value of Color Palettes panel



CONTINUOUS: live will run continuously until users press “LIVE STOP button”

4. Laser Camera Setting (Continue)

Some of Laser Camera Settings, for suitable value, please refer to
https://www.vision-components.com/fileadmin/external/documentation/software/lib/libvclinux/latest/html/a00009.html

Settings: Laser Camera

X0	0	Y0	0
Width	2048	Height	1536
Threshold	100	Shutter	1000
Gain	200	FlashID	1
Current Flash (mA)	1500		
Max Flash (mA)	10000		
Trigger Source	TRGSRC_IMM		
Trigger Mode	TRGMODE_EDGE		

Laser Settings

despecleKx[1,3,5,7]	3	despecleKy[1,3,5,7]	3
laserDyMin[0..63]	3	laserDyMax[0..63]	32
bgSubKy[0],[1],[2..31]	0	SAVE SETTING	

Default when start camera
despecleKx : 1
despecleKy : 1
laserDyMin : 10
laserDyMax : 63
bgSubKy : 0

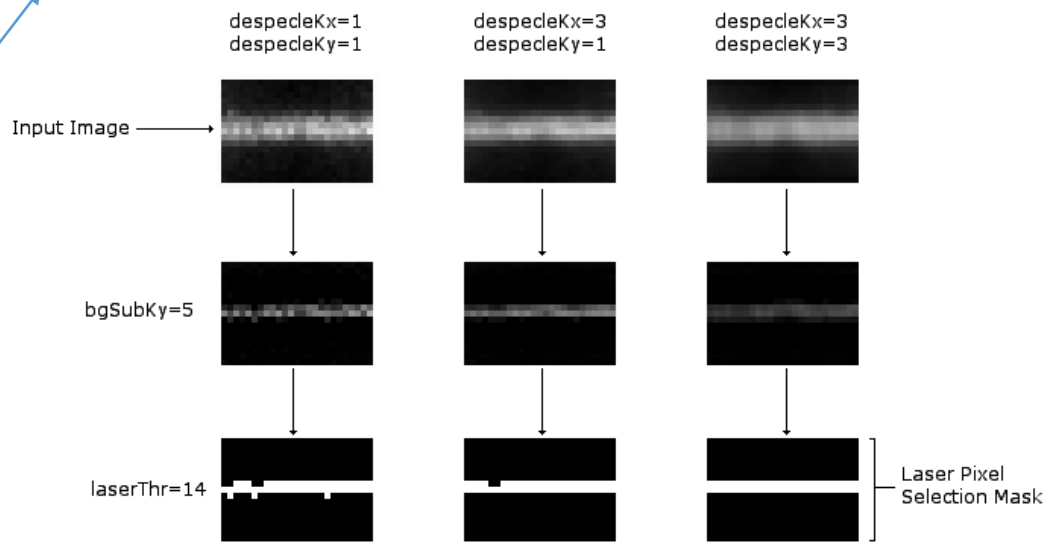
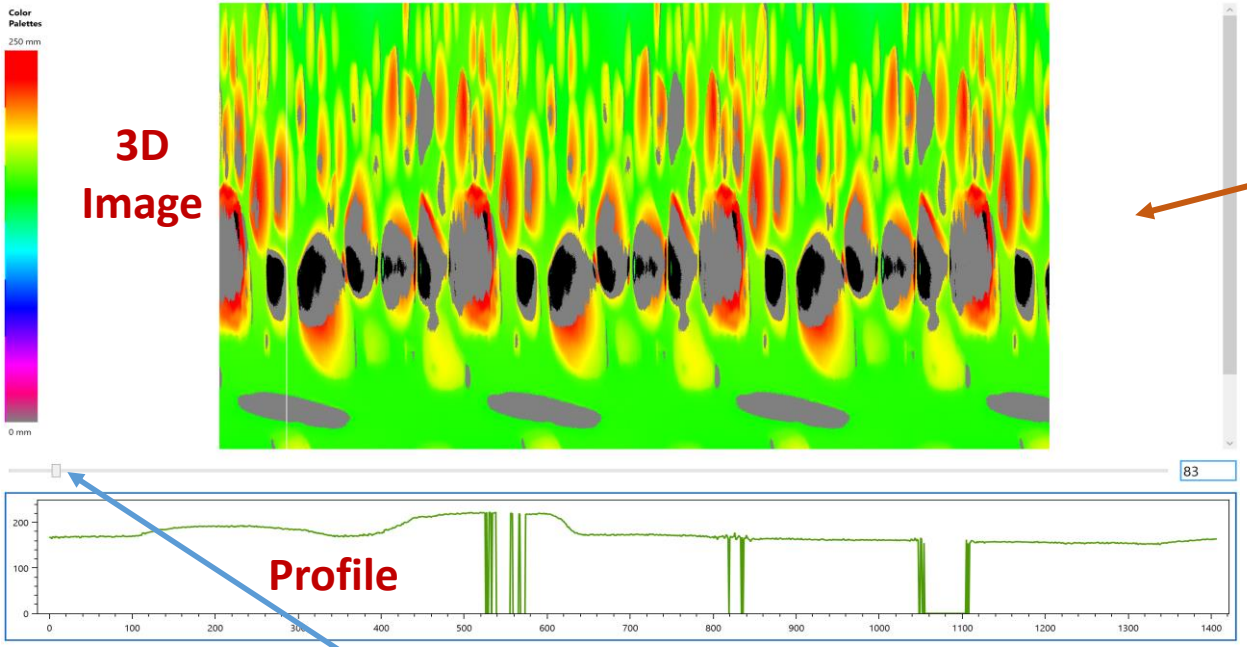
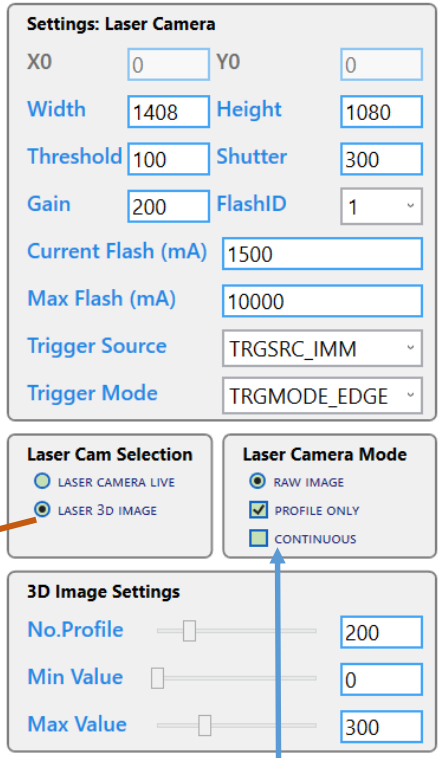


Image Souce: www.vision-components.com

4. Laser Camera Setting (Continue)

- Selection of Laser Camera
  - **Laser Camera Live**: PC get image and profile of camera then display into interface
  - **Laser 3D Image**: Same as “Laser Camera Live”, but PC receives enough number of profile, it will calculate 3D images and show it into interface

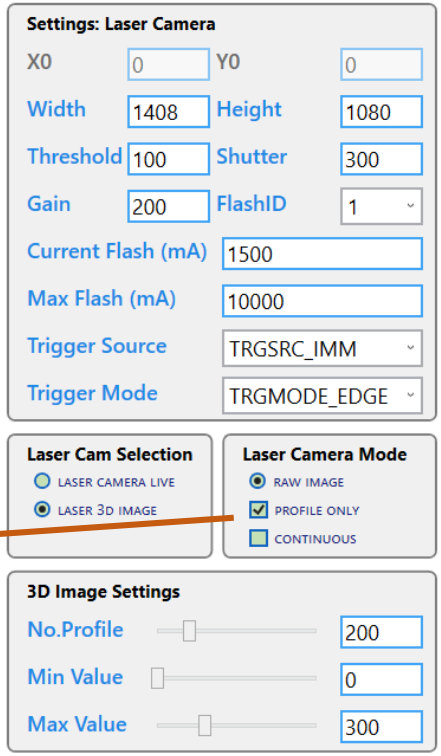




CONTINUOUS: live will run continuously until users press “LIVE STOP button”

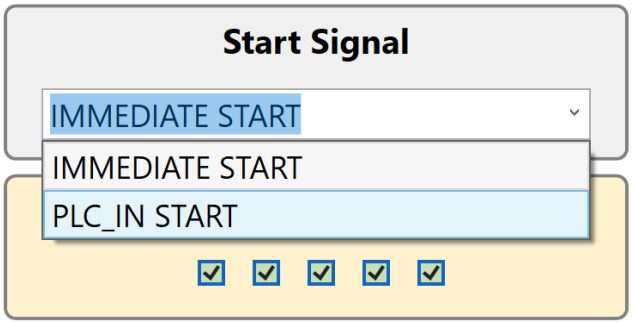
4. Laser Camera Setting (Continue)

- Mode of Laser Camera
  - **Raw image**: Show both image and profile
  - **Profile Only**: Show profile only
  - **Continuous**: used when select “Laser 3D Image” and check “profile only”. Application will continuously run and make new 3D image for each “number of profile”

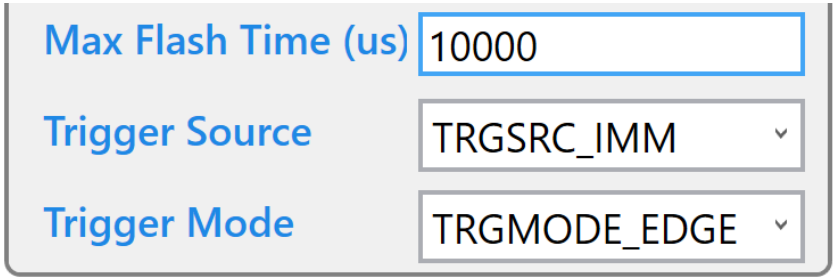


PLC_IN Start Signal

- For start signal, you can choose
  - IMMEDIATE START: this is no trigger mode
  - PLC_IN START: this is trigger mode, using GPIO Nr. 10 as PLC_IN signal



- Please note that PLC_IN is different from Trigger Source. Trigger Source here is snap trigger



NOTE: Incorrect VC Lib

- Your camera may have different VC LIB with us, in this case, there are some message similar this

```
error while loading shared libraries: libvcimgnet.so.1:
cannot open shared object file: No such file or directory
```

- In this case, please copy the missing files from 01A_DemoLinux/vclib to /usr/lib

Thank You For Using This Software

- For more information and for developing smart camera software in practical application, please feel free to contact us at http://mitech.jp/

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