VA8801

DUT (Device Under Test)

user guide v1.0

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Create DUT Firmware

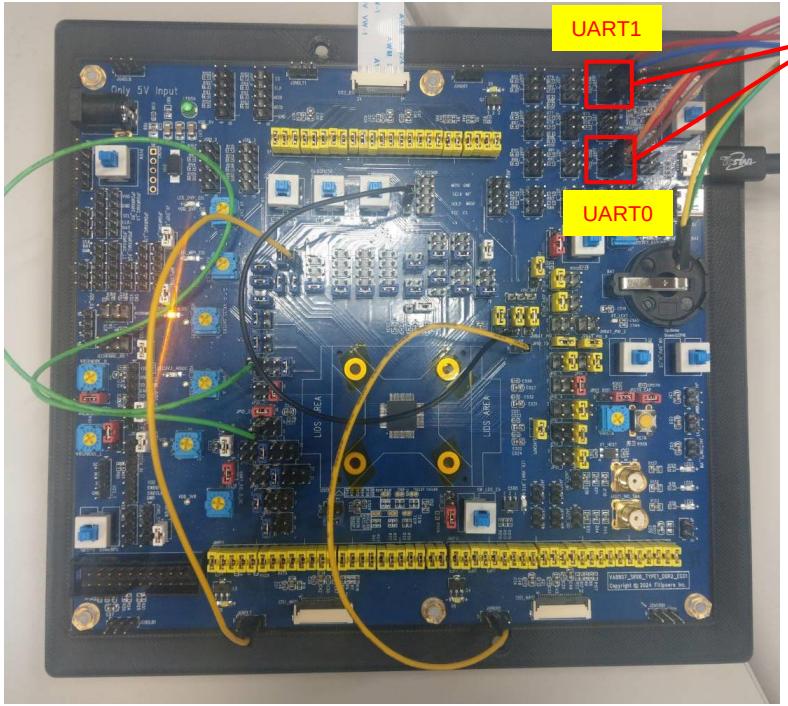
- 3 targets are available:
  - Face Detection, Gesture, A+V
- Build using Vscode IDE
- For Vscode build instructions, please refer to:
  - SDK_ROOT_PATH\VA8801_BSPSDK_V3.000.00\Doc\Vscode\VSCode_Toolchain_Build System_user guide_v2.0.pdf

Flash download -1
Burn in FW using DFU

- To burn in VA8801 FW, please refer to:
  - SDK_ROOT_PATH\VA8801_BSPSDK_V3.000.000\DFU Tool\FITI_VA8801_DFU_ToolKit_v1.0.0.pdf

Flash download -2
VA8801 HW Settings

FT232_RX connect to UART_TX
FT232_TX connect to UART_RX
FT232_GND connect to UART_GND

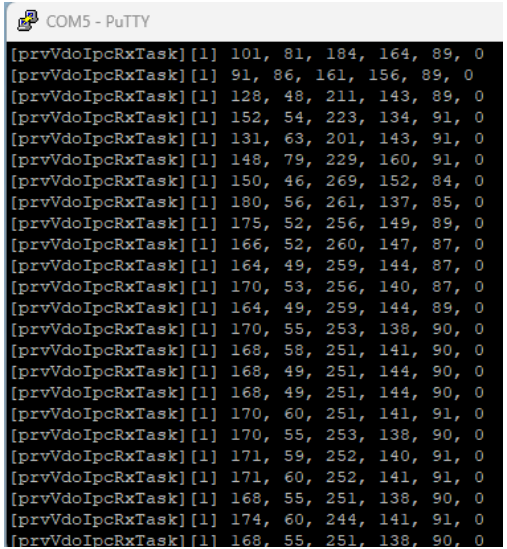


Pin from top to bottom:
UART_RX
UART_TX
UART_GND

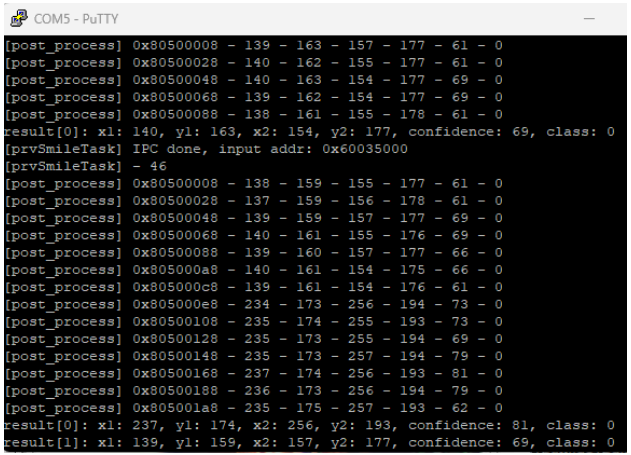
FT232 connect to PC/NB

Flash download -3
Check UART log

After burn in FW, check the camera detection results via both UART0 and UART1



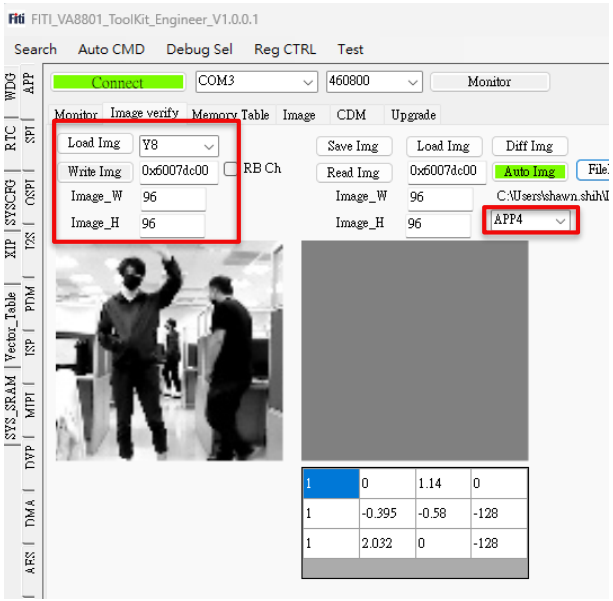
UART0 System log



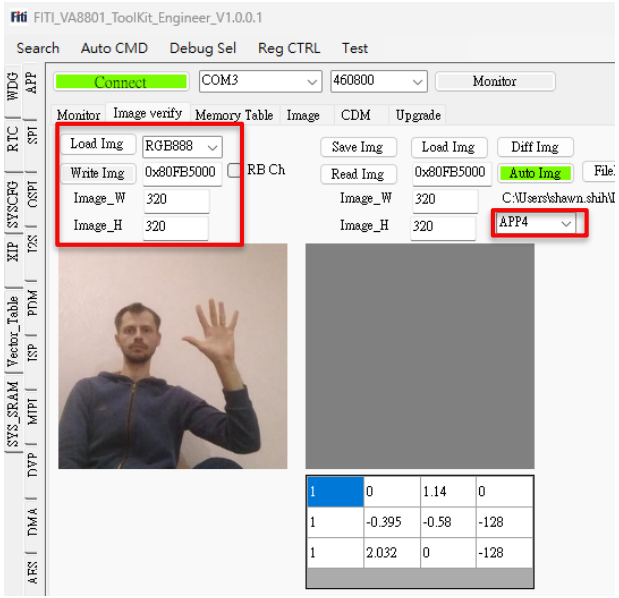
UART1 NPU log

DUT tool settings based on different targets

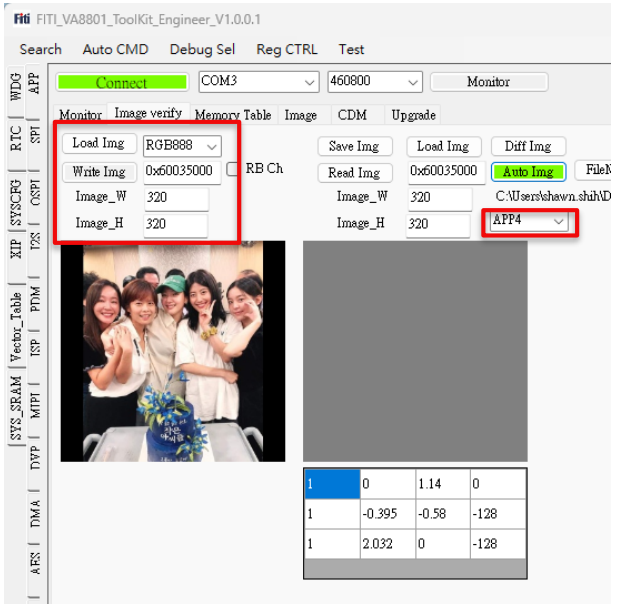
- For DUT, every target has its own settings, note that 96*96*1 image size is for A+V , and 320*320*3 is for Gesture & Face Detection
- The instructions in p.8~p.11 are based on target Face Detection, for other targets, please change DUT tool settings as follow.



A+V

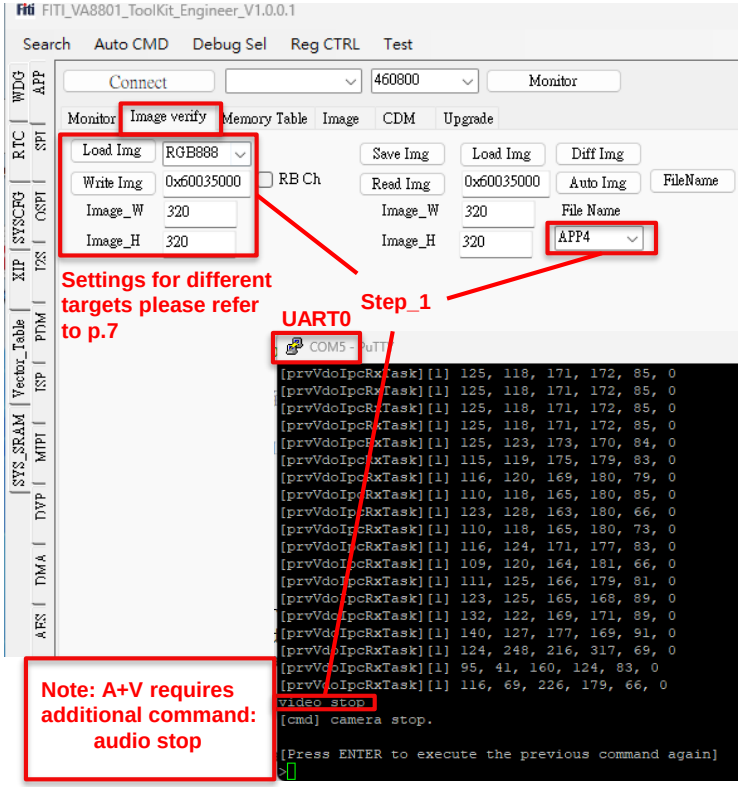


Gesture



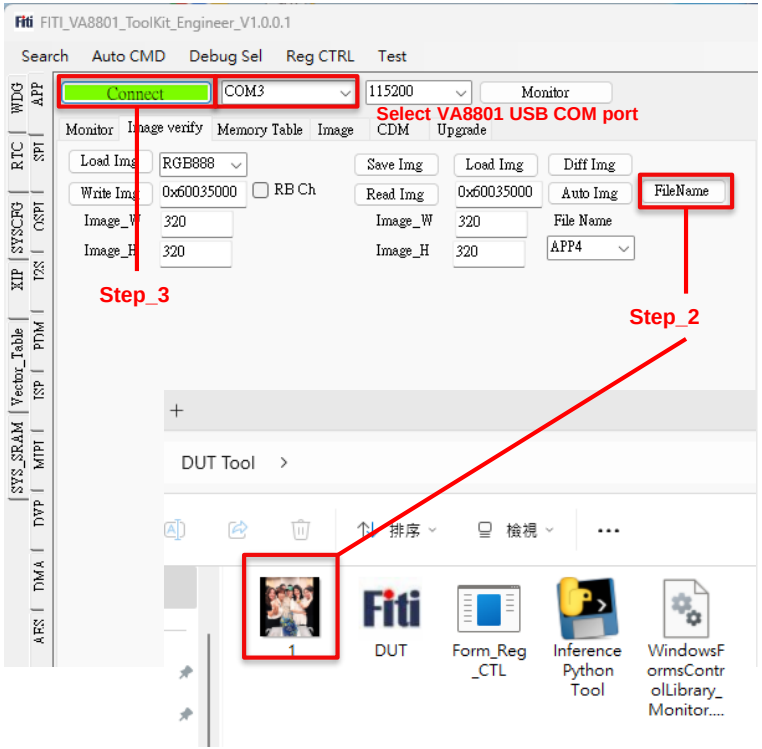
Face Detection

Validate Face Detection Scenario



- **Step1.** Open UART0 and type command: “video stop” to close camera, then open DUT tool and adjust settings.
- **Step2.** Put an Image_W*Image_H image in the tool’s root directory. Click “FileName” button and specify that image.
- **Step3.** Select VA8801 USB COM port and Click “Connect” button to establish USB connection with VA8801.
- **Step4.** Click “Auto Img” button, the image located at filepath specified in Step2 will be send to VA8801, and the image itself will be deleted immediately. Check the detection result in UART0, and then **be sure to disconnect UART0 from your serial tool**.
- **Step5.** Run Inference python tool, this tool will copy the images from source directory to tool’s root directory, rename it to the image specified in Step2, then the image will be send to VA8801 and be deleted by DUT tool automatically as in Step4. The inference result will be parsed from UART0 and can be found in folder: “inference result” and “inference_result.txt”.

Validate Face Detection Scenario



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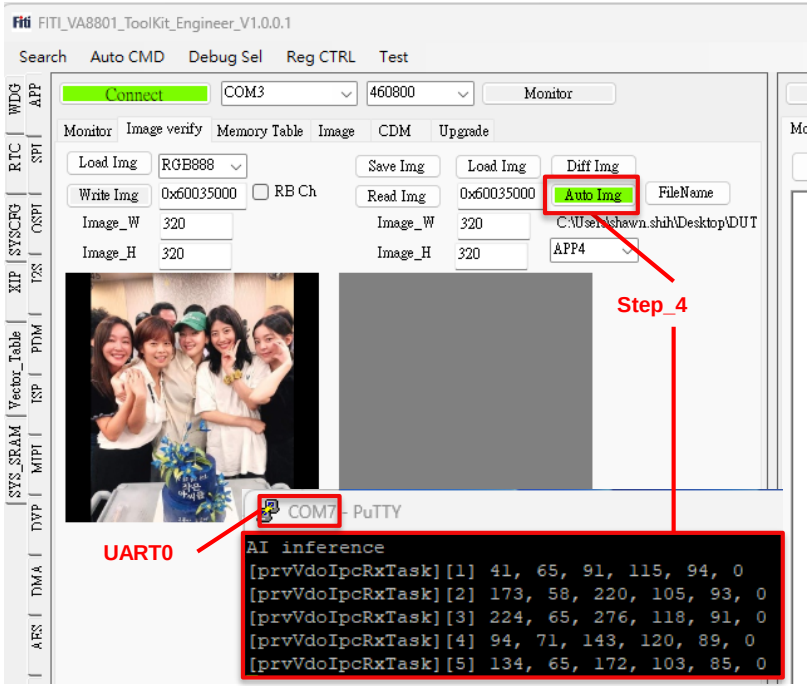
Validate Face Detection Scenario



Inference result will be listed under "AI inference" in the form: x1, y1, x2, y2, confidence, class

***disconnect uart0 serial from your serial tool after checking the results**

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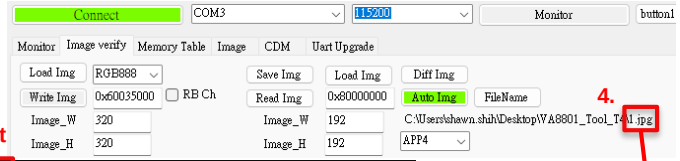
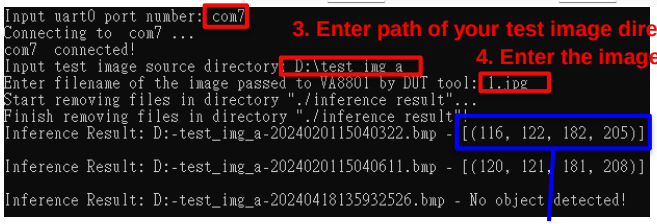
Validate Face Detection Scenario

Step_5

1. Open Python tool

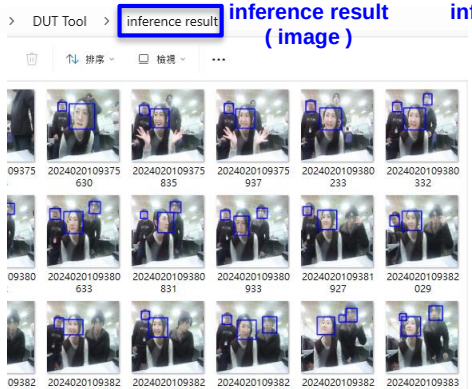
2. Enter uart0 COM port



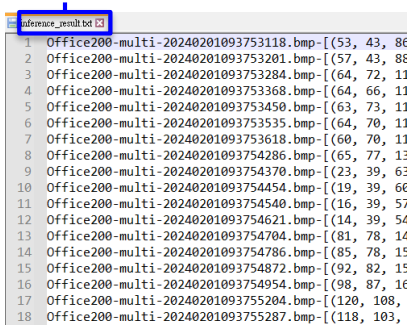


3. Enter path of your test image directory

4. Enter the image name specified in Step2



inference result (image)



inference_result.txt (x1, y1, x2, y2)

*If no object detected, inference_result.txt will show [(0, 0, 0, 0)]

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REVISION HISTORY

Revision	Date	Author	Description
1.0	2024/05/27	Shawn Shih	New issued

THANKS