

# **VA8801 Series**

*Rev. 0.2*

## **NPU User Guide**

**AI SoC**

*fitipower integrated technology Inc.*

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## 1. DESCRIPTION

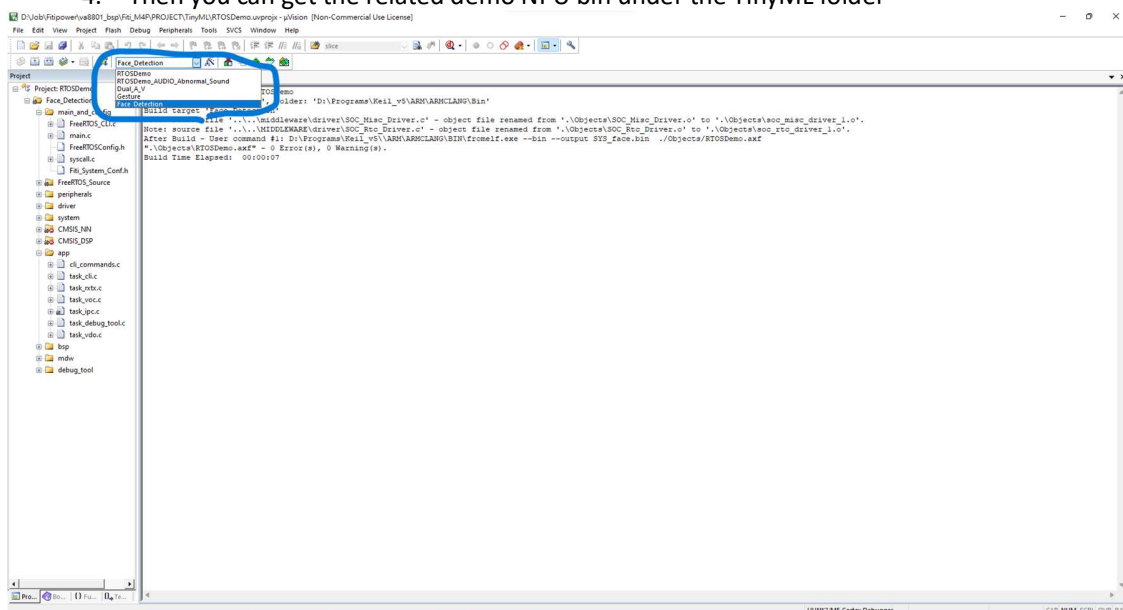
We provide some demo NPU projects to show how NPU works and what NPU can do.

## 2. DOWNLOAD IMAGE AND START

### 2.1 Build Image

#### 2.1.1 Build sys.bin

1. Open TinyML project with keil
2. Select the target (Dual\_A\_V or Gesture)
3. Click Build
4. Then you can get the related demo NPU bin under the TinyML folder



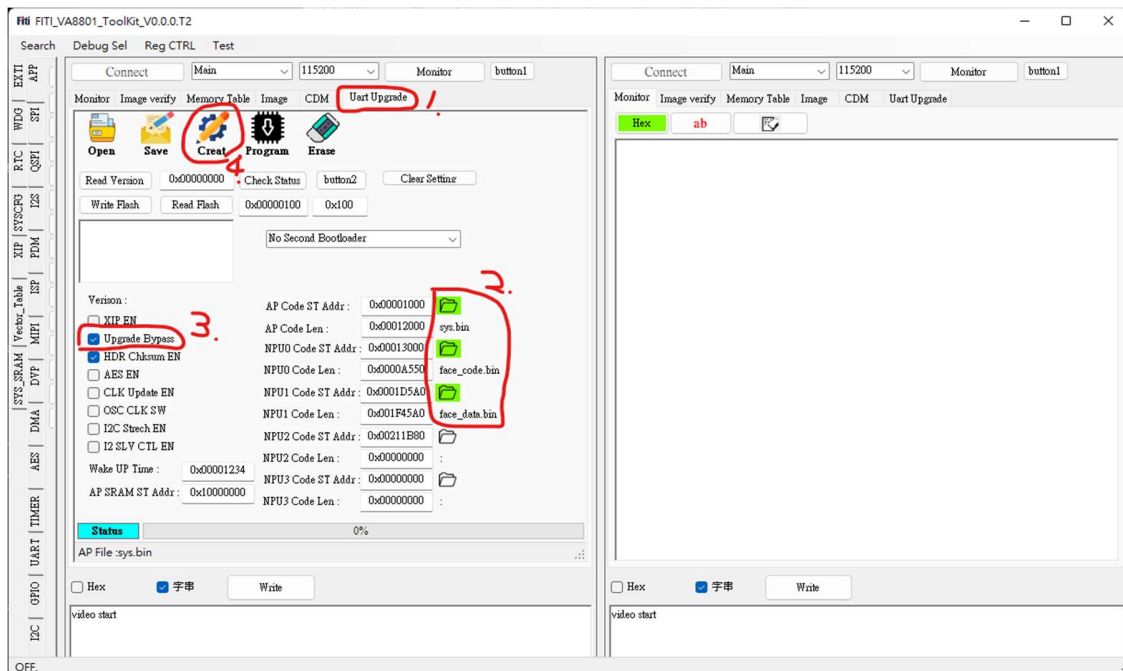
#### 2.1.2 Build NPU

You can get the demo NPU bin in the “NPU Bin” folder in VA8801 SDK

#### 2.1.3 Build Flash Image

Open the “FITI\_VA8801\_ToolKit”

1. click the “Uart Upgrade” tab
2. choose the sys.bin, NPU\_code and NPU\_data
3. Check the “Upgrade Bypass” checkbox
4. Click “Create” and the flash image will be generated



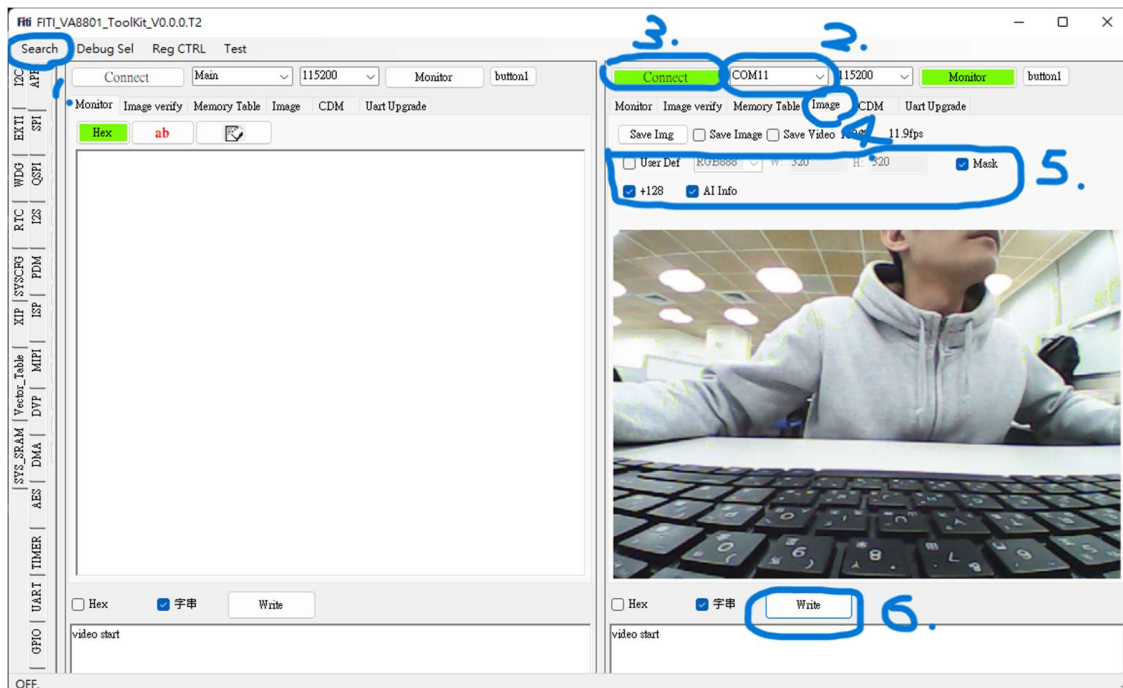
## 2.2 Download

Please refer to the Download Docs to understand how to download image to flash

## 2.3 Start

After flash image download, reset the power button, Open the "FITI\_VA8801\_ToolKit"

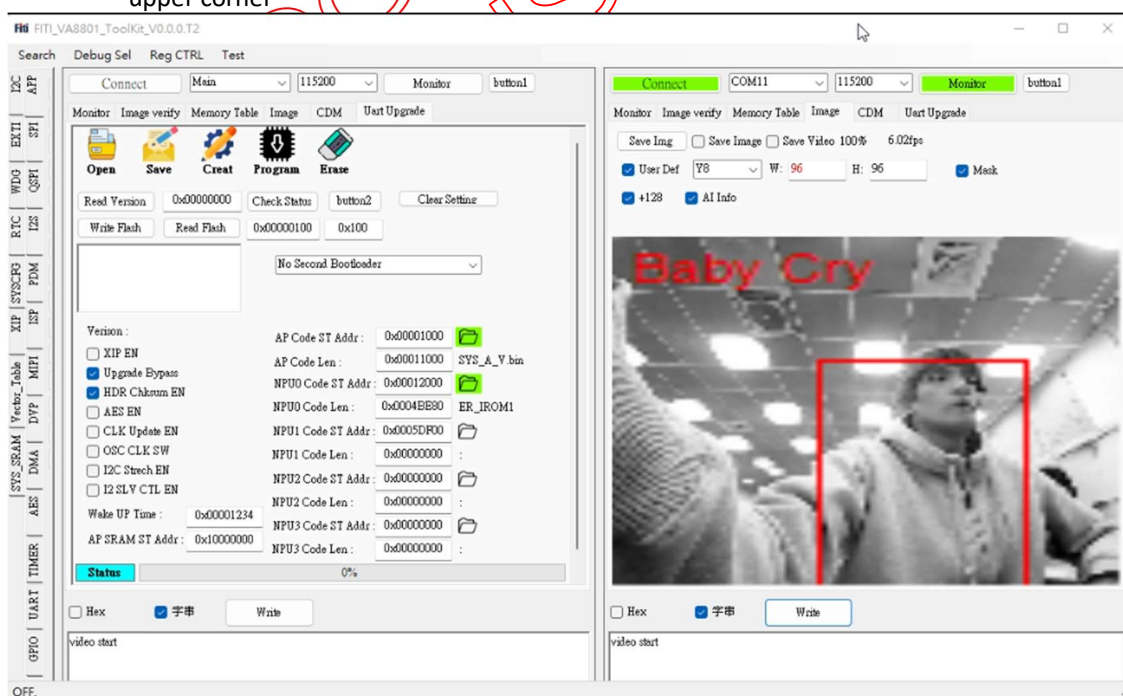
1. Click the "Search" to refresh COM port
2. Choose the USB output COM port
3. Click "Connect"
4. Click "Image" tab to show the camera image
5. Check the "Mask", "+128" and "AI Info" checkbox
6. Click "Write" button to show the camera image and AI inference result



### 3. DEMO PROJECT

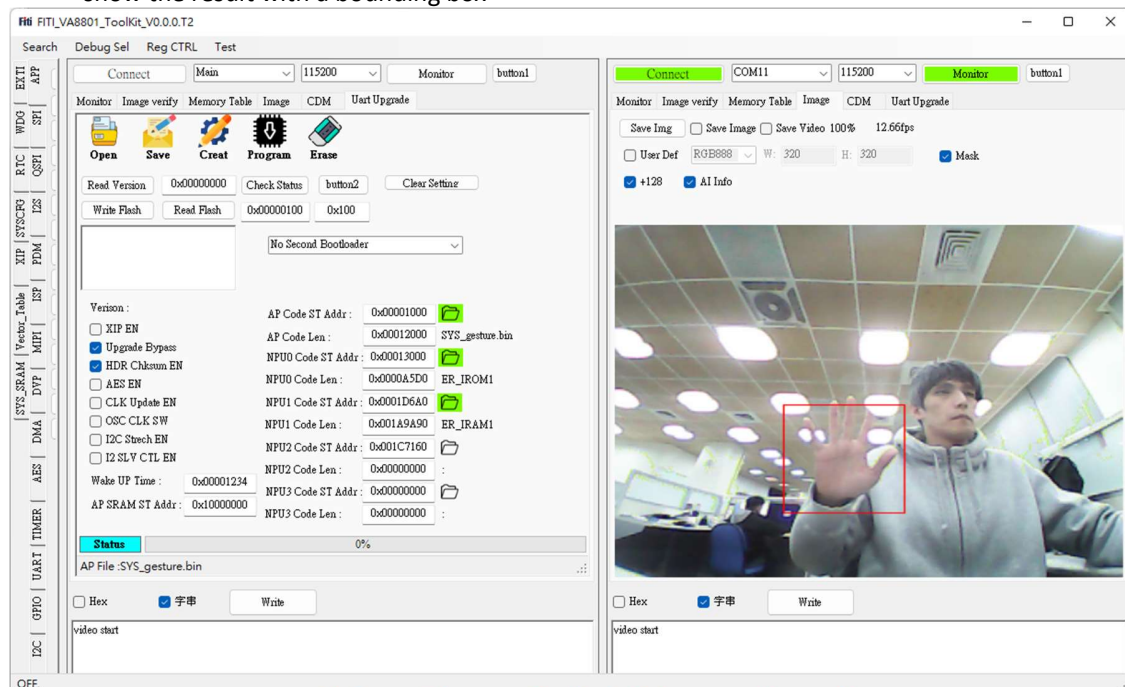
#### 3.1 A+V (Audio + Video):

1. This demo will show you NPU run abnormal sound detection and human detection at the same time
2. If human is detected, the screen will show the result with a bounding box
3. If abnormal sound is detected (here is baby cry), the screen will show the result on the left upper corner



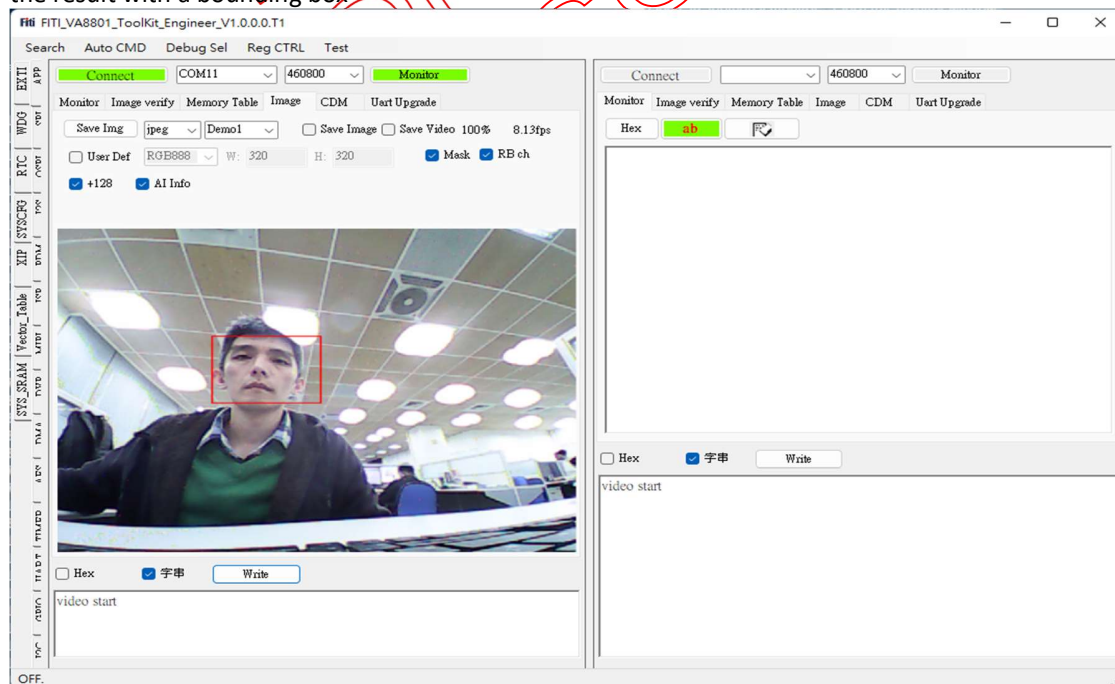
### 3.2 Gesture:

This demo will show you NPU run gesture model, if the trained gesture is detected, the tool will show the result with a bounding box



### 3.3 Face Detection:

This demo will show you NPU run face detection model, if the face is detected, the tool will show the result with a bounding box



## 4. REVISION HISTORY

Revision	Content	Date
0.1	New issued	2024/01/29
0.2	Add Face Detection Demo Project	2024/02/29

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