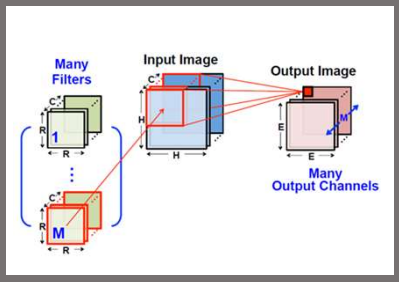
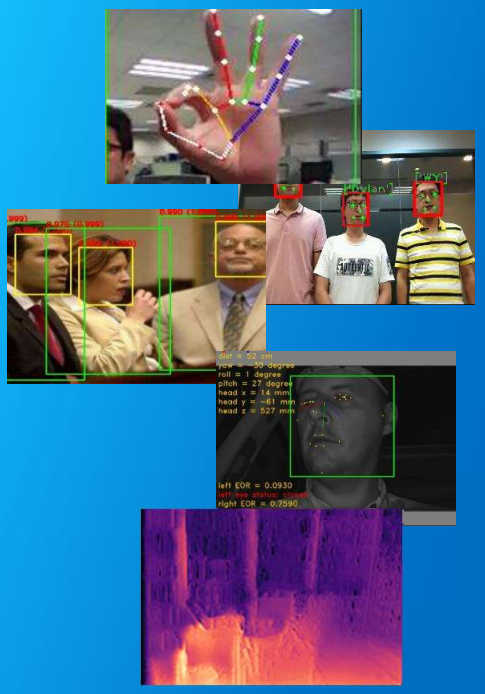
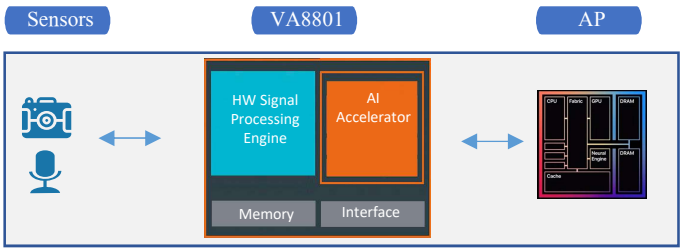
FitiPower

VA8801 AI Chip

Neural Network







Overview

VA8801是俱備高運算力且極低功耗的自主開發的邊緣運算神經網路晶片,擅長處理語音/影像及各種感測器資料(Sensor Fusion). 在主AP還未喚醒前以Sensor Hub的角色在極低功耗實時(always-on)感測及預處理環境訊息. 必要時才將AP喚醒以降低系統功耗.

VA8801除內建硬體化各種訊號處理運算處理(ISP/DSP)並配置先進人工智慧神經網路加速器執行各式AI模型(人臉偵測/物件偵測/語音偵測)並應用於各類終端產品並使其智慧化.特別是電池供電類產品(Doorbell/IPcam..).

Key Specification

- **CPU(System)**
  - Cortex – M4+FPU @ 200MHz
- **ISP Pipeline**
  - Bayer/mono/IR, Up to (2668*1680)
  - CDM
  - AE/AWB
  - WDR
  - Scaling (2~20:1), X/Y Independent
  - Cropping / Rotation
  - Gamma Correction
  - Bypass modes
  - Direct/demosaic/scaling/Cropping/Gamma
- **Memory**
  - SRAM
  - DDR
- **NPU(AI)**
  - Controller
  - DLA (Hardwired AI Engine) - 0.5Tops
- **Image Sensor Interface**
  - MIPIR x/Tx: CIS 2 Lane;DVP (12 bits)
- **Audio**
  - PDM Input/Out,I2S In/Out
- **USB 2.0**
- **ADC/DAC**
- **JPEG Encoder/Decoder**
- **Security – AES/SHA/RAS**
- **Peripheral interface**
  - I2C, SPI, QSPI, UART, GPIO
- **Package**
  - QFN56 Type1: DDR (128Mb, option)
  - QFN56 Type2: DDR (128Mb, option)
  - QFN68 Type 1: DDR (128Mb)
  - QFN68 Type 2: DDR (128Mb)

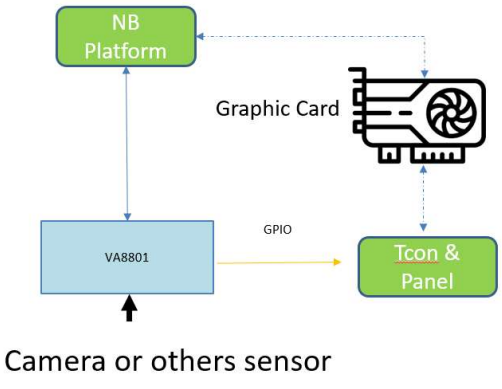


Figure 1. VA8801 in TCON Application

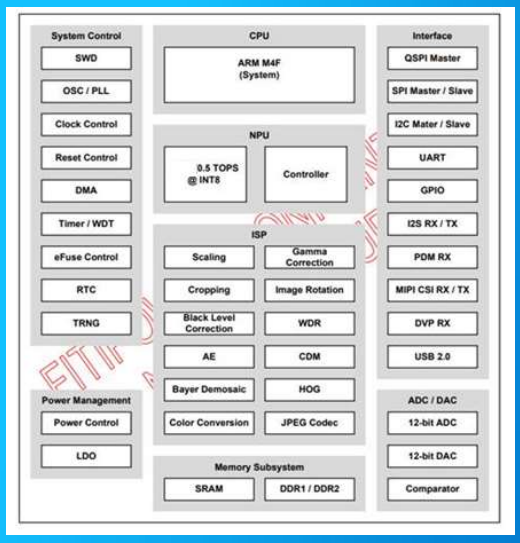


Figure 2. VA8801 Block Diagram

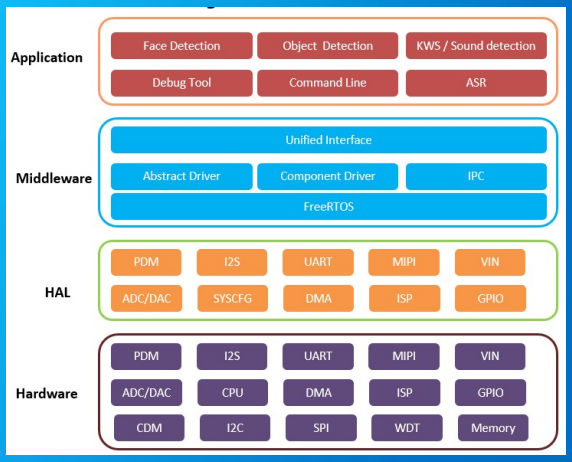


Figure 3. VA8801 System Architecture

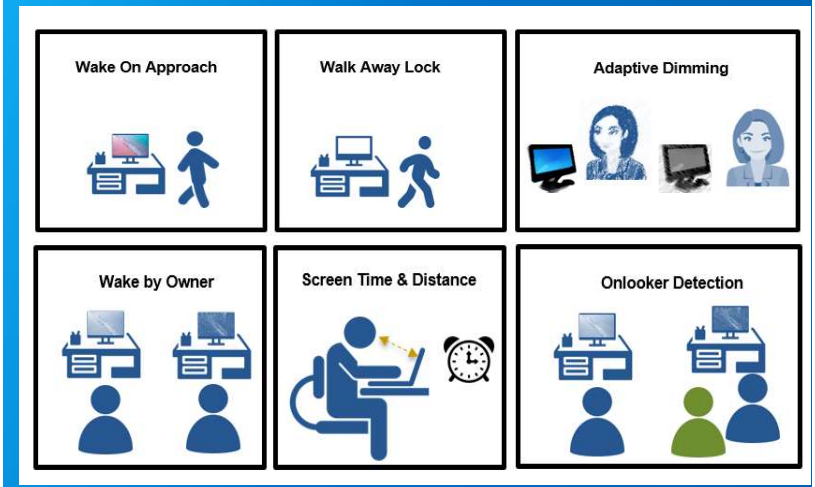


Figure 4. VA8801 in NB Applications