

TURBO X

C610/C410 SOM C610/C410 Open Kit



The C610/C410 SOM is an intelligent vision platform with powerful image processing and machine learning for smart camera and intelligent IoT devices. It's powered by the Qualcomm® QCS610/QCS410 SoC (System-on-Chip), which is also known as Qualcomm Vision Intelligence platform, providing a cost-effective solution to accelerate the product development and commercialization process. The C610/C410 SOM supports Linux and Android OS, featuring a powerful combination of superior camera and video processing capability, outstanding audio processing solution and onboard Artificial Intelligence (AI) Engine. It serves a great variety of IoT devices including AI camera, Video Conference, Surveillance camera, Panorama camera, Dash Camera and Edge Computing.

Applications



AI Camera



Video Conference



Surveillance Camera



Panorama Camera



Dash Camera



Edge Computing

Features

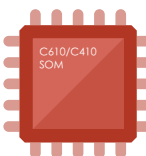
Linux Yocto with enhanced light weight software architecture and toolchain

Connected Camera SDK

AV framework with APIs for multi channels audio/video stream encoding

Multi Cameras

3 cameras concurrency with 2 on IFE and 1 on IFE Lite



C610/C410 SOM

Optimized low light performance with sHDR and TNR

AI

TensorFlow Lite DSP run-time support through HexNN

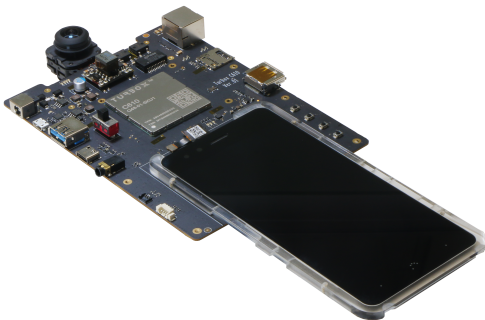
Panorama Camera

Dual Camera side by side stitching algorithm

Specifications

Category	Description
Platform	C610: 2x K4G (Enyo) 2.2 GHz + 6x K4S (A55) 1.8 GHz, 1MB L3 cache C410: 2x K4G (Enyo) 2.2 GHz + 2x K4S (A55) 1.8 GHz, 1MB L3 cache
GPU	Qualcomm® Adreno™ GPU 608 with 64-bit addressing; 845 MHz
DSP	Hexagon™ DSP with dual Qualcomm® Hexagon™ Vector eXtensions (HVX), 1.1 GHz
Memory	C610: LPDDR4X 4GB + eMMC 64GB ,or LPDDR4X 2GB + eMMC 16GB C410: LPDDR4X 2GB + eMMC 16GB
Connectivity	WLAN 1 × 1 802.11a/b/g/n/ac and Bluetooth 5.0.
Encode	C610: 4K@30 fps 8-bit: HEVC C410: 1080p@90 fps 8-bit: HEVC
Decode	C610: 4K@30 fps 10-bit: HEVC C410: 1080p@90 fps 10-bit: HEVC
Display Interfaces	1 x MIPI-DSI 4-lane, 1080p@60 fps, 1 x DisplayPort
Camera Interfaces	Dual ISP support, 3 x 4-lane CSIs (4/4/4 or 4/4/2/1), D-PHY 2.1Gbps/lane, C-PHY 5.7Gbps/lane
Other Interfaces	2 x Slimbus, 1 x USB 3.1, 1 x USB 2.0, 1 x SDIO, 4 x I2S, 14 x QUPs, 1 x RGMII, 120 x GPIOs
Operating Environment	Operation Temperature: -20°C ~ 70°C Operation Humidity: 5%~95%, non-condensing
Dimension	38mm x 38mm
OS Support	Linux, Android

C610/C410 Open Kit



The TurboX C610/C410 Open Kit is a cost-effective solution to evaluate the performance and build the prototype of the smart cameras and intelligent IoT devices quickly. The Open Kit features rich interfaces, including USB Type A, HDMI in, Ethernet, and camera mezzanine-board expansions enabling the Kit “open” for building camera-based devices, including panorama, smart camera and video conference camera. The Open Kit supports Linux and Android operating system, combining powerful artificial intelligence and machine learning to address increasing demand for smart cities, commercial and enterprise, homes and vehicles applications.

Category	Description
Camera Mezzanine Board	Mezz A: 2 x IMX577 Mezz B: 1 x IMX347 / 1 x IMX334 (3x Optical Zooming) Mezz C: 1 x IMX415 + 1 x HDMI in
Display Interfaces	1 x DP, 1 x 5.0 “ TFT-LCD, 1 x 3.5mm headset
Audio Interfaces	6 x Digital Mics(From External Codec) 2 x Speaker out (From Codec)

*Optional IMX577 camera board, IMX 577 camera module and TFT-LCD display module for selection.