Thunder**comm**

T U R 3 O X

C8550 SOM

Thundercomm TurboX C8550 SOM is a highly integrated SOM (System On Module) powered by next Gen Flagship Qualcomm® Snapdragon™ QCS8550 processor. It is designed with 4nm process and integrated with Android and Linux. TurboX C8550 supports Android, featuring in advanced AI increases, huge camera, video advancements and evolved graphics. It is an ideal platform for IoT products that require high computing power, advanced camera capability, and superior graphics performance.

Applications

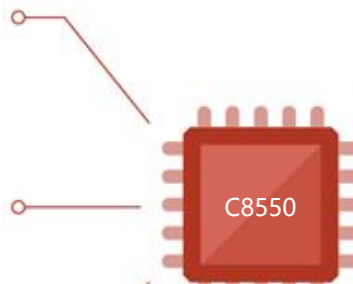|			
Smart Camera	Video Conference	Automated Manufacturing Robots	Autonomous Mobil Robot
Collaborative Robot	Delivery Robot	Urban Air Mobility (UAM) Transportation	Edge Computing

Features

8th Gen AI Engine
Over 10x performance boost to previous gen

Next Gen Kryo™ CPU
Up to 1.5x over previous gen

3A+IQ upgrades;
3 ISP, 3 x 36MP@30FPS
HW sHDR, AON

C8550

C8550 SOM

Hypervisor enables multiple Trusted VMs (TVMs)

3 times GPU performance improvement compared to the previous generation

8k@60FPS decoding,
8k@30FPS encoding AV1 decoder

C8550 SOM Specifications

Category	Description
Platform	Qualcomm® QCS8550 Kryo™ CPU Adreno™ 740 GPU GPU Spectra™ ISP
Memory	12GB + 128GB
AI Performance	HTP INT8 48 TOPs, GPU FP16 12 TOPs
Connectivity	No built-in Wi-Fi
Display	2 x DSI 4-lane; support up to 4K@120Hz 1 x DP V1.4
Camera	3 x 36 MP@30FPS ISPs 4 x CSI D-PHY-1.2 4-lane 2 x CSI D-PHY-1.2 2-lane 2 x CSI C-PHY-2.0 3-trio 5 x concurrent (3 IFEs + 2 IFE-lites) HW sHDR; AON
Video	4k@240FPS / 8k@60FPS decoding 4k@120FPS / 8k@30FPS encoding AV1 decoding
PCIE	1 x 2-lane Gen4 1 x 2-lane Gen3
USB	1 x USB 3.1 Gen 2 (with DP V1.4)
Operating Environment	Operation Temperature: -35℃ ~ +75℃ Operation Humidity: 5%~95%, non-condensing
Voltage	3.2V ~ 4.5V
Format	LGA
Dimension	39mm x 33mm x 2.75mm (excluding height of the bottom shielding case)
OS	Android 13 (T), LE/LU (planning)
Certificate	ROHS/Reach/WEEE/TSCA

Carrier Board for TurboX C8550

- 1 x HDMI OUT 4K
- 1 x DP V1.4 over Type-C
- 2 x Speaker Out
- 1 x HDMI IN with audio (Over I2S interface)
- 1 x HDMI OUT with audio (Over I2S interface)
- 3 x 4-lane D-PHY camera, one for AON camera
- 1 x 3-trio C-PHY camera, compatible with 4-lane D-PHY
- 2 x 2-lane D-PHY camera
- 2 x GMSL
- 1 x USB 3.1 Type-C
- 7 x USB 3.0 Type-A
- 2 x Micro USB for debug
  (one for SOM debug, one for M.2 module)
- 1 x TF card socket
- 1 x SIM card socket
- 1 x Fan connector
- 2 x 1000M Ethernet port
- 1 x M.2 for Thundercomm 5G module
- 1 x SDIO Wi-Fi 5 module
- 2 x DMIC connector, supporting up to 8 DIMCs
- 2 X DB9 connector, one for RS232, one for RS485
- 1 x CAN connector
- 1 x A+G sensor
- 1 x Magnetometer
- 1 x HS connector
- 1 x 3.5mm headphone connector
- 5 x LED

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