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TURBOX

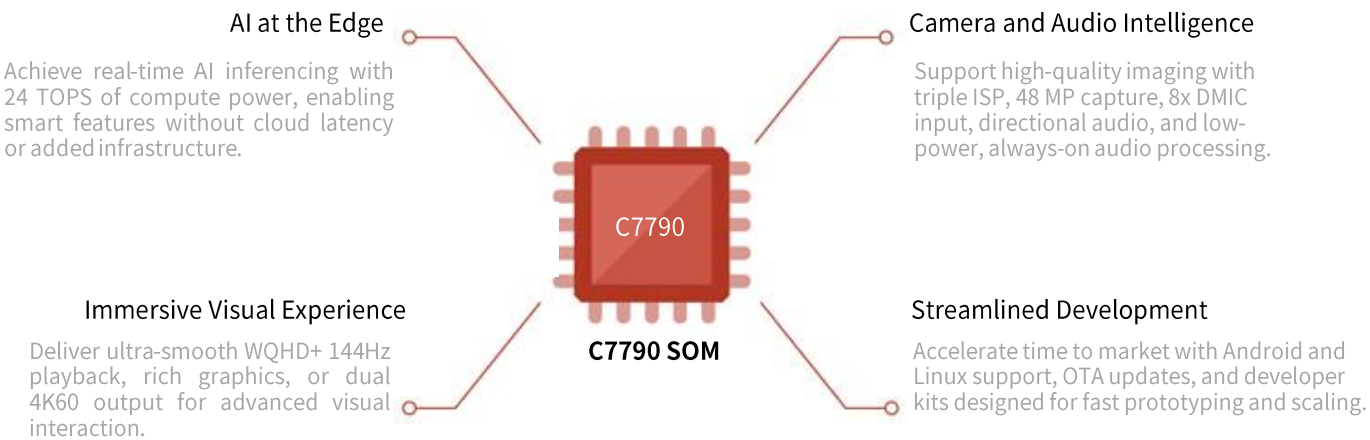
C7790 SOM

The Thundercomm TurboX C7790 SOM is a highly integrated System on Module (SOM) powered by Qualcomm® CQ7790S processor. Built on a cutting-edge 4nm process, it supports both Android and Linux operating systems. TurboX C7790 supports Android, featuring powerful computing, extreme edge AI processing, and robust video and graphics. It is an ideal platform for IoT products that demand powerful computing, advanced imaging, and exceptional graphics rendering.

Applications

- Smart Camera
- Video Conference
- Automated Manufacturing Robot
- Autonomous Mobile Robot
- Collaborative Robot
- Delivery Robot
- Urban Air Mobility (UAM) Transportation
- Edge Computing

Features



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TurboX C7790 SOM Specifications

Category	Description
Platform	Qualcomm® Dragonwing™ CQ7790S
Operating System	Linux, Android*
Memory [1)]	UFS 3.1 [2)] LPDDR5X SDRAM, 2 x 16-bit wide; mass production up to 4200 MHz
Display	2 x MIPI DSI D-PHY-1.2 4-lane Support dual MIPI DSI ports Maximum resolution: WQHD + 144 Hz/WFHD + 180 Hz HDMI 2.1 with HDCP 2.2 support
Camera	4x MIPI CSI D-PHY v1.2 /C-PHY v2.0 Qualcomm spectra ISP supports connectivity to multiple cameras due to four C-PHY/D-PHY Real-time sensor input resolution: 21 + 21 + 21 Four concurrent MIPI-CSI configurable in 4 + 4 + 4 + 4 configuration
Encode/Decode	VPU – fifth-generation UHD video processing unit Video decode: Up to 4K120 for H.264/H.265 Video encode: Up to 4K60 for H.264/H.265/VP9 Support for VC1 decode Video concurrency: UHD30 decode (8/10) + UHD30 encode (8) HDR playback: Support for HDR10 and HDR10+ HFR capture: 720p at 240 fps
Audio	eNPU/AI accelerator: Embedded AI accelerator for LPI and low-power use cases DSP offload for audio playback, including USB digital audio and Bluetooth audio
USB	1 x USB 3.1 Gen2 with DP1.4
PCIe	1 x PCIe Gen3 1-lane 1 x PCIe Gen3 2-lane
QUP	QUPs, SSC QUPs
SDIO	SDC (SD3.0) SD card
Debug port	1 x Debug UART 1 x JTAG
Power	Voltage: 3.2V ~ 4.8V
Dimensions and Form Factor	Size: 39mm x 33mm x 3.35mm Weight: 8g Interface form factor: LGA-628
Operating Temperature	-30°C to +75°C
Certificate	RoHS*/Reach*/WEEE*/TSCA*

* Planning

1) Please note that storage devices such as UFS, eMMC, NAND, etc. have a limit to the total amount of data that can be written. Exceeding this limit can cause damage to the storage device.

2) For custom configuration options, contact our sales team.

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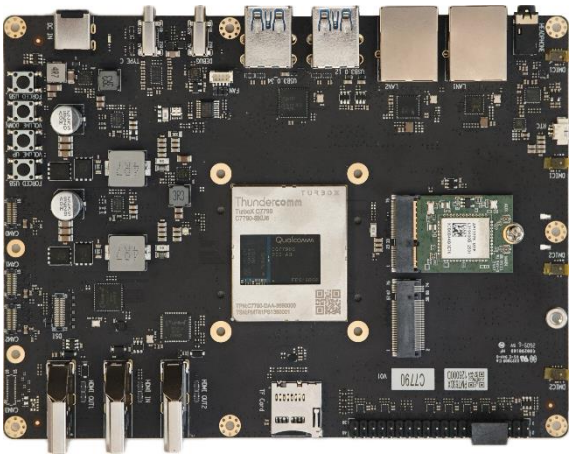
TurboX C7790 Development Kit Specifications

Category	Description
SOM on Board	TurboX C7790 SOM
Display Interface	2 x HDMI OUT connector 1 x DP over Type-C 1 x MIPI DSI connector (cannot be used concurrently with HDMI OUT1)
Audio Interface	1 x HDMI IN with audio (Over I2S interface) 1 x HDMI OUT with audio (Over I2S interface) 1 x HDMI OUT with audio (Over SoC native interface)* 1 x 3.5mm headphone connector 4 x DMIC (Onboard)
Camera Interface	3 x 4-lane D-PHY camera 1 x HDMI IN
Other Interfaces	1 x USB 3.1 Type-C 4 x USB 3.0 Type-A 2 x 1000M Ethernet Port 1 x TF Card Slot 1 x M.2 Key B for SSD 1 x M.2 Key E for Wi-Fi BT module 1 x Fan connector 1 x RTC connector 1 x Type-C for UART 1 x DC in Jack 1 x A+G sensor 1 x E-Compass
Operating Temperature	-30°C to 75°C
Dimension	160mm x 124mm x 20.5mm

* In development



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