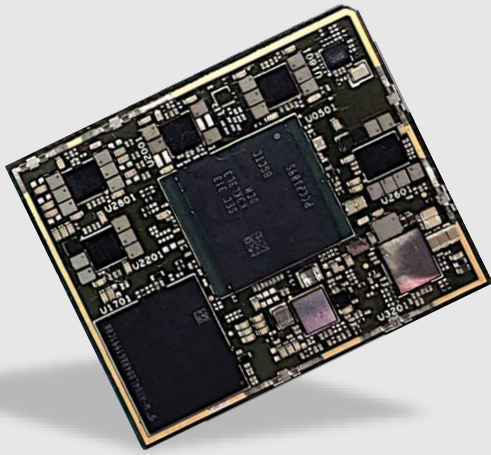# Aikri QCS8550 System On Module (SoM)

Based on the Qualcomm® QCS8550 SoC

1. AI and ML Applications
2. 4K Camera
3. Telehealth / Medical
4. Collaboration
5. Machine Vision
6. Digital Signage / HMI
7. Video Conferencing Systems
8. Robotics
9. Telematics

About eInfochips

eInfochips, an Arrow Electronics company, is a leading provider of digital transformation and product engineering services. eInfochips accelerates time to market for its customers with its expertise in IoT, AI/ML, security, sensors, silicon, wireless, cloud, and power. eInfochips being a Qualcomm Snapdragon Technology Partner (STP) offers turnkey product designs on multiple Snapdragon and other SoCs of Qualcomm® and have enabled global customers with Qualcomm based product designs.
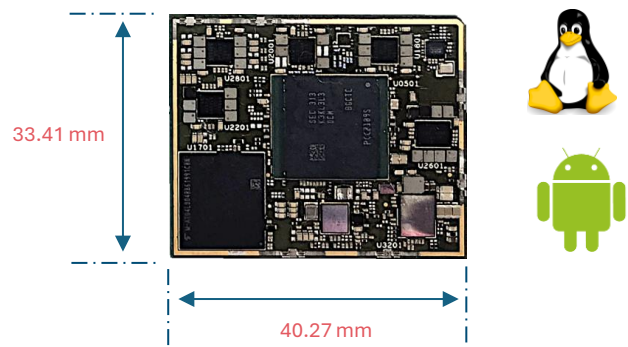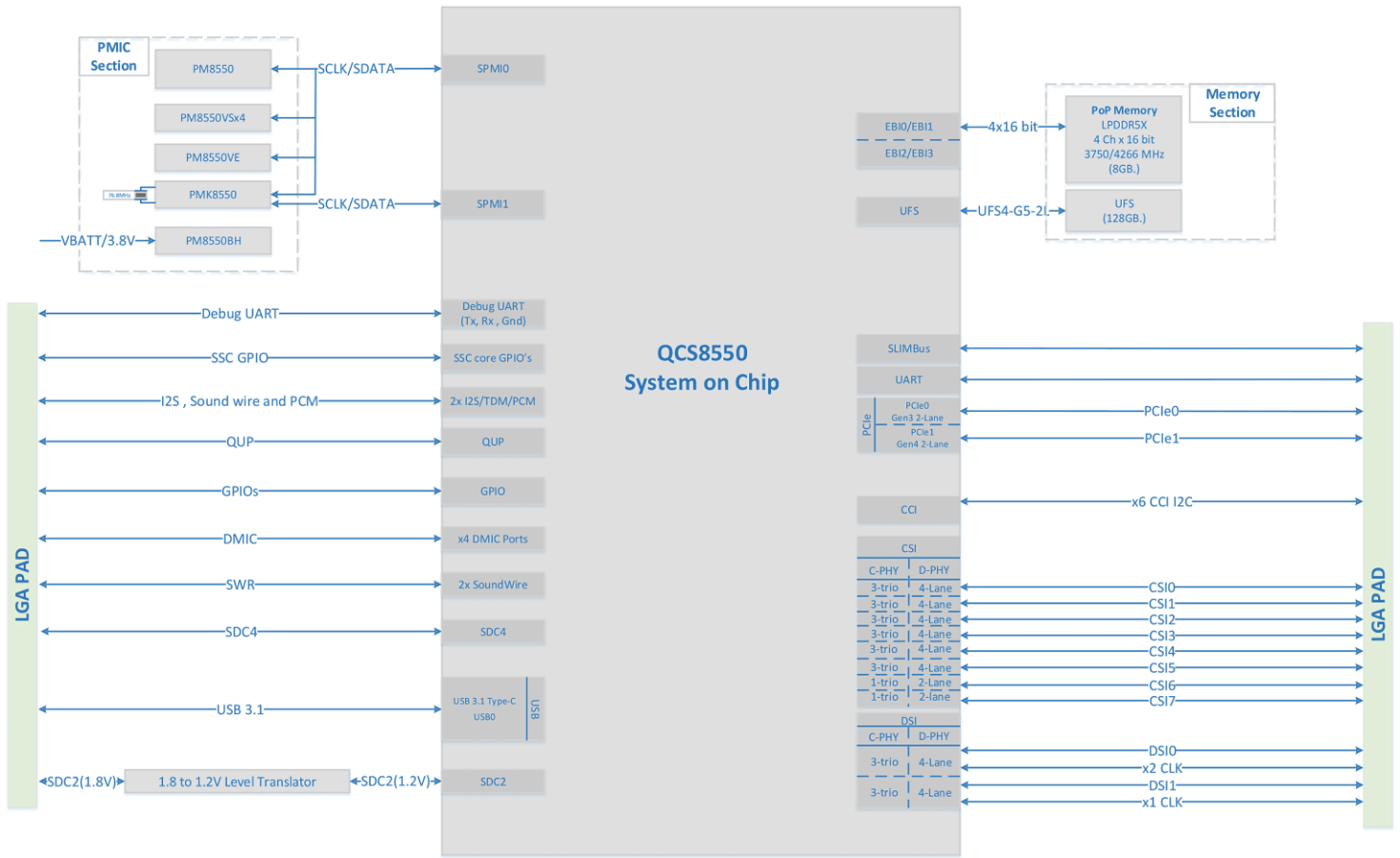
eInfochips Aikri QCS8550 SoM

The Aikri 8550 System on Module (SoM) is based on Qualcomm® QCS8550 System on Chip and delivers excellent heterogeneous computing, vivid graphics and video with optimized AI architecture for extreme edge AI processing. This LGA SoM integrates an ARM Cortex-X3 based Octa-Core Kryo™ CPU, Adreno™ 740 GPU, Hexagon™ DSP/HTP with HVX and HMX and Spectra™ ISP with cognitive triple 18-bit ISPs to provide very high edge AI processing capabilities.

The Aikri 8550 SoM enables OEMs and engineers to evaluate performance of QCS8550 for their next-gen designs while minimizing design risk factors and reducing design cycle time with early time to market.

eInfochips Advantages

- ✓ **28** Years of experience in system design
- ✓ **10** Design centers worldwide
- ✓ **500+** Product designs
- ✓ **35+** Product designs on Qualcomm
- ✓ **15M+** Product deployments across globe
- ✓ **ISO 9001, ISO13485, AS9100/EN9100, ISO26262** and **CMMi L3** compliant processes

33.41 mm

40.27 mm

PMIC Section

- PM8550 — SCLK/SDATA — SPMI0
- PM8550VSx4
- PM8550VE
- PMK8550 — 76.8MHz — SCLK/SDATA — SPMI1
- VBATT/3.8V — PM8550BH

QCS8550 System on Chip

Memory Section
- EBI0/EBI1, EBI2/EBI3 — 4x16 bit — PoP Memory LPDDR5X 4 Ch x 16 bit 3750/4266 MHz (8GB.)
- UFS — UFS4-G5-2L — UFS (128GB.)

Left side (LGA PAD):
- Debug UART — Debug UART (Tx, Rx, Gnd)
- SSC GPIO — SSC core GPIO's
- I2S, Sound wire and PCM — 2x I2S/TDM/PCM
- QUP — QUP
- GPIOs — GPIO
- DMIC — x4 DMIC Ports
- SWR — 2x SoundWire
- SDC4 — SDC4
- USB 3.1 — USB 3.1 Type-C USB0 / USB
- SDC2(1.8V) — 1.8 to 1.2V Level Translator — SDC2(1.2V) — SDC2

Right side (LGA PAD):
- SLIMBus
- UART
- PCIe: PCIe0 Gen3 2-Lane — PCIe0; PCIe1 Gen4 2-Lane — PCIe1
- CCI — x6 CCI I2C
- CSI: C-PHY / D-PHY
  - 3-trio / 4-Lane — CSI0
  - 3-trio / 4-Lane — CSI1
  - 3-trio / 4-Lane — CSI2
  - 3-trio / 4-Lane — CSI3
  - 3-trio / 4-Lane — CSI4
  - 3-trio / 4-Lane — CSI5
  - 1-trio / 2-Lane — CSI6
  - 1-trio / 2-lane — CSI7
- DSI: C-PHY / D-PHY
  - 3-trio / 4-Lane — DSI0 / x2 CLK
  - 3-trio / 4-Lane — DSI1 / x1 CLK

Aikri QCS8550 SoM

Processors	Qualcomm® QCS8550 • 64-bit ARM Cortex-X3 compliant octo-core (1 prime + 4 gold + 3 silver) • Adreno™ 740 GPU capable of rendering 4K@120 fps UI, 8550 VPU for 4K Encode/decode and 1295 DPU for 4K display support • Qualcomm® Hexagon™ Tensor Processor (HTP) with Hexagon Vector eXtensions (HVX) and Hexagon Matrix eXtensions (HMX) • Spectra™ ISP
AI Performance (INT 8)	48 TOPS
Memory	8GB LPDDR5, 128GB UFS
Display Interfaces	2x MIPI-DSI 4-lane - D-PHY 1.2 at 1.5 Gbps per lane; split link supported
Camera Interface	• 4x MIPI-CSI 4-lane; 2x MIPI-CSI 2-lane - D-PHY 1.2 at 2.5 Gbps per lane supported. • 3x IFE + 2x IFE Lite; Always-On
Audio Interfaces	• Soundwire • DMICs • MI2S
I/O Interfaces	• 1x USB-C 3.1 with DP • 1x PCIe 2-lane Gen3; 1x PCIe 2-lane Gen4 • GPIOs, SPIs, I2Cs, I3C, UARTs; GPIO connections to sensor core DSP
Operating Environment	• Input voltage: 3.6V • Operating temperature: -30 to +85° C
Mechanical Specification	• SoM: 40.27mm x 33.41mm LGA
Software and OS	• Linux, Kernel 5.15 • Android 13

Orderable Parts	**Linux**
	• System On Module (SOM): Aikri-85X-50LS-8
	• Dev kits: Aikri-85X-50LD-8 – Basic dev kit
	   Aikri-85X-50LD-8-4 – Dev kit with accessories
	   (Sensor card, Audio card, DMICs, Camera modules)
	
	Android
	• System On Module (SOM): Aikri-85X-50AS-8
	• Dev kits: Aikri-85X-50AD-8 – Basic dev kit
	   Aikri-85X-50AD-8-1 – Dev kit with accessories
	   (Sensor card, Audio card, DMICs, Camera modules)

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