

Qualcomm

Qualcomm[®] Smart Display 200 Platform (APQ8053-Lite)

The Qualcomm Smart Display 200 Platform is purpose-built with rich multimedia, powerful image processing and machine learning features.

Smart displays are a rapidly growing segment that build on headless voice assistants to provide not only visual feedback, but also higher levels of Artificial Intelligence (AI) and vision based use cases. The Qualcomm Smart Display Platforms are designed to integrate the necessary technologies, with support for voice, display, audio and camera interfaces, along with enhanced AI capabilities in a cost-effective platform.

Our purpose-built Smart Display 200 Platform is based on the Qualcomm[®] APQ8053-Lite System-on-Chip (SoC) and integrates power management ICs, audio codec support and Wi-Fi/Bluetooth connectivity to support cost savings on BOM, as well as on commercialization efforts to integrate several subsystems. The APQ8053-Lite SoC is built to support either Android Things or Android as the operating system (OS). The Android Things platform is designed to help OEMs and developers solve development challenges with comprehensive solutions based on Qualcomm Technologies processors in order to quickly and cost-effectively develop smart displays featuring Google services such as Google Duo and Google Maps.

To further facilitate fast and cost-effective development of AI-enabled smart displays, we have worked with third-party distributors to design and make available certified System-On-Modules (SoMs), development boards and full form factor reference devices. In addition, we have collaborated with several popular AI solution providers to demonstrate the extensibility of the platform to support a host of machine learning solutions.

Highlights

Smart display solutions to satisfy a variety of new user experiences

With the number and types of smart connected devices increasing, our broad portfolio of Smart Display Platforms helps to create differentiated user experiences across product lines, from low-end to premium.



Create innovative, cost-effective AI-enabled home devices

Our Smart Display Platforms are engineered to accelerate development and proliferation of AI-enabled home devices that can include Voice and Face Recognition, Context Aware Sound Detection (baby cry, glass break), Intelligent Motion Detection, and Gesture and Hand Tracking among others.



Designed to streamline development and scalability

The turn-key platforms are specifically designed to help support customers with rapid commercialization of innovative smart display devices.



Heterogenous computing for on-device machine learning and more

The highly optimized custom CPU, GPU and DSP are designed to provide high compute capability at low power. Heterogenous computing is made simple with easy to use SDKs giving flexibility to implement a variety of AI use cases.





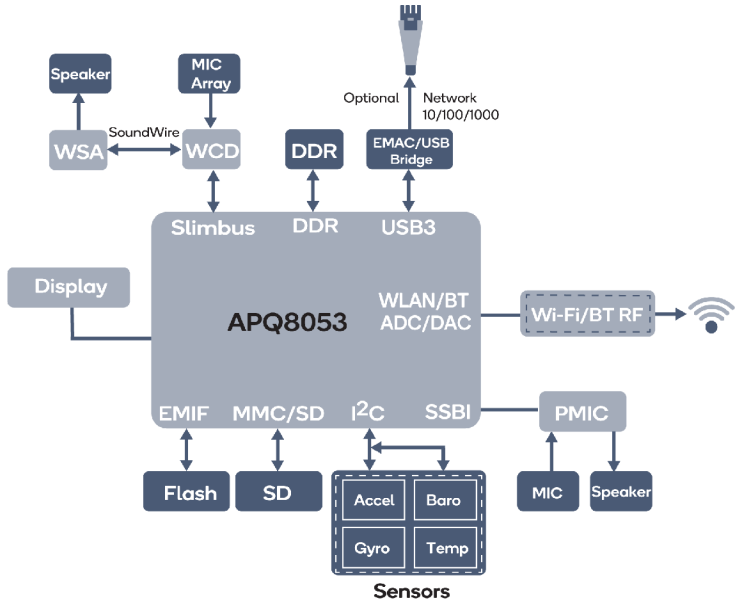
Qualcomm Smart Display 200 Platform Applications

- Smart Displays
- Portable Smart Displays
- Video Conferencing
- Remote Video Monitoring
- AI-enabled Smart Displays
- Movie and Video Streaming
- Display Panels
- Security Cameras with Displays

Features

- Heterogeneous architecture includes 64-bit, quad and octa-core CPU solutions ranging from 1.8GHz to 2.2GHz per core
- Dual ISP ideal for supporting intelligent camera features for use cases like video telephony, security and machine learning
- Qualcomm® Adreno™ GPU with 64-bit addressing @ up to 650MHz with latest API support
- Qualcomm® Hexagon™ 546 DSP designed to provide battery-efficient audio, video, and computer vision use cases
- Low power Qualcomm® Snapdragon™ sensor core helps support always-on use cases at reduced power levels
- Integrated Wi-Fi 802.11ac, Bluetooth and GPS support
- Worldwide ecosystem of vendors, customers, developers and embedded device OEMs

Platform Block Diagram



Software

- Support for Android and Android Things Operating Systems (OS)
- **Android Things OS:** Comprehensive solutions to help OEMs and developers solve development challenges by providing turnkey end to end use cases and services pre-integrated on Qualcomm Technologies processors.
- **Qualcomm® Neural Processing SDK:** optimizing deep learning processing performance across available resources to achieve superior edge computing experience.
- **Video Analytic Manager:** enabling easy integration of 3rd party video analytic solution.
- **Security:** Full Disk Encryption (FDE), Security Boot, Kernel and BSP Protection.

Platform Specifications

		Qualcomm Smart Display 200 Platform
CPU		APQ8053-Lite: 8x A53 @ 1.8 GHz, 1MB L2
Video	Decode	1080p90 HEVC
	Encode	1080p90
Camera	Performance	930Mpix/sec, HW WNR, LTM, Advanced AF Dual ISP 21MP30 ZSL
	Interface	CSI 4+4+4 lane (or 4+4+2+1), DPHY1.2, CPHY 1.0
Memory & Storage		1x 32-bit LPDDR3 933MHz, eMMC5.1, SD3.0
Location		GPS/GLONASS, BeiDou, Galileo
Wireless Connectivity		Integrated 1x1 802.11b/g/n/ac, Bluetooth 4.x, FM
Display	Resolution	1920x1200 60fps + 1080p30 Miracast
	Interface	2x DSI 4+4 lane
GPU		Adreno 506 @ 650MHz
Audio	Analog	Integrated Codec Qualcomm® PM8953 or WCD9326/35
	Audio	HD-Audio, Dolby, SVA
	Voice	Qualcomm® Noise and Echo Cancellation
Sensor DSP		Hexagon DSP based
Modem		Snapdragon X9 LTE modem
		<i>Integrated modem option available in the MSM8953 variant</i>
		LTE Category 13 (uplink peak speed of 150Mbps) LTE Category 7 (downlink peak speed of 300Mbps)
Technology / Package		14LPP, 12x14 mm2, non-POP



Qualcomm Adreno, Qualcomm Hexagon, Qualcomm Snapdragon, Qualcomm Noise and Echo Cancellation and Qualcomm Neural Processing SDK are products of Qualcomm Technologies, Inc. and/or its subsidiaries.

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smart display
200 platform

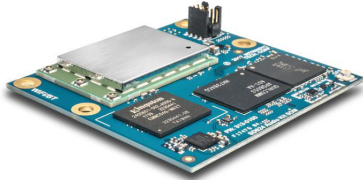
Develop with Qualcomm Smart Display 200 Platforms

- System-on-Module (SoM)
- Development Kit

Open-Q™ 624A System-on-Module

by Intrinsic Technologies

based on APQ8053-Lite



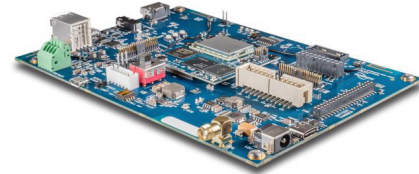
Features

- Feature-rich, Android powered, production ready module based on the Qualcomm Smart Display 200 Platform with APQ8053-Lite application processor
- Octa-Core 64-bit Arm Cortex A53 1.8 GHz
- Adreno 506 GPU
- Hexagon DSP
- 2GB LPDDR3 RAM, 4GB eMMC Flash
- Pre-certified Wi-Fi/Bluetooth module – 802.11a/b/g/n/ac, 2x2 MU-MIMO, 2.4/5 GHz, Bluetooth Low Energy v4.2
- Extensive peripheral I/O make it ideal for devices that require cloud connectivity and edge compute capabilities
- Multimedia, HD video camera, and touch display capabilities, along with extensive audio features for creating next-gen smart display products requiring tasks such as video conferencing, remote video monitoring, movie and video streaming
- SoM dimensions: 50mm x 46.5mm
- Available from Intrinsic Technologies www.intrinsic.com

Open-Q™ 624A Development Kit

by Intrinsic Technologies

based on APQ8053-Lite



Features

- Ideal for evaluation of the Open-Q™ 624A SoM as well as jump-starting development of AI-enabled home hub products requiring tasks such as video conferencing, remote video monitoring, movie and video streaming
- 2x 4-lane MIPI CSI camera connectors
- Multiple digital microphones and stereo speaker amp outputs
- I²S/SLIMBUS headers for expansion to external audio devices
- 1x 4-lane MIPI DSI connector for optional LCD/touchscreen, LCD up to 1080p Full HD 60fps
- Video Capture up to 1080p at 90fps, Video Playback up to 1080p at 90fps, H.264 (AVC) and H.265 (HEVC)
- Interfaces: 1x USB3.0 Type C, debug UART USB, sensor expansion header, GPIO expansion header (GPIO, UART, SPI, I²C buses), haptics output
- 2x Wi-Fi PCB antennas (2x2 MIMO) + separate Bluetooth PCB antenna for isolation
- Power input: 12V/3A from included power adapter
- Carrier Board dimensions: 170mm x 115mm
- Available from Intrinsic Technologies www.intrinsic.com

For additional product information visit:

Qualcomm® Developer Network

www.developer.qualcomm.com

Createpoint

www.createpoint.qti.qualcomm.com

Go to Product Kits: Smart Display

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