

Qualcomm® Snapdragon Wear™ 4100+ Platform

Snapdragon Wear 4100+ Platform Advancements

The Snapdragon Wear 4100+ platform, comprised of a powerful applications processor and ultra-low power co-processor, extends our hybrid architecture and is designed to deliver super-fast performance, and connectivity, a smarter Always-On experience, and extended battery life for next generation connected smartwatches.

- **Powerful SoC (Qualcomm® SDM429w and Qualcomm® SDA429w)**

12nm quad core A53 processor @ up to 2.0 GHz, Qualcomm® Adreno™ 504 GPU, fast LPDDR3 memory, dual ISPs with support for 16-megapixel cameras, 4G LTE multi-mode modem, Wi-Fi, Bluetooth, integrated location, and dual Qualcomm® Hexagon™ DSP's.

- **Ultra-low power co-processor (Qualcomm® QCC1110)**

Incredibly small (~21 mm²), custom designed SRAM, 1MB memory, dedicated PMU and runs efficient event-driven RTOS.

- **Dual Display Architecture**

Supports core baseband and co-processor to write directly to the display via either high performance MIPI or low power SPI interfaces.

- **Multiple configurations available**

Snapdragon Wear 4100+ features SDM429w or SDA429w + QCC1110 AON Co-processor and supports Wear OS by Google. Also available without the QCC1110 AON co-processor as Snapdragon Wear 4100 with support for Wear OS by Google and Android Open Source.

Highlights

Super fast performance + connectivity

The new System-on-Chip (SoC) is designed to deliver 85% higher performance compared to the Snapdragon Wear 3100 platform for faster app launches, more responsive UX, and richer photo and video experiences.



The globally certified, highly integrated 4G LTE modem utilizes 12nm process technology, dedicated DSP with its own power rail, low power features such as eDRX, and support for Cat 4/3/1.

Smarter, always-on (AON) co-processor

The AON Co-processor now supports up to 64K colors and extends offload experiences to include continuous heart rate monitoring, faster tilt-to-wake responsiveness, steps, alarms, timers, and haptics.



Ultra-low power platform

The new platforms utilize the 12nm low power process technology, dual DSPs for optimal workload partitioning, Qualcomm® Sensor Assisted Positioning for Wearables, and Bluetooth 5.0 designed to reduce power consumption >25% and bring extended battery life to the platform.



Richer, enhanced experiences

Immersive Interactive Mode: A more immersive experience with camera, voice assistant, voice / video messaging and richer watch faces.

Richer Ambient Mode: Support for up to 64K colors and number kerning for rich, colorful watch faces in ambient mode. Also supports smooth second hand, complications, adaptive brightness, and touch.

Powerful Sports Mode: Go for an ultra-marathon with GPS, off-line maps, and heart rate monitoring without worrying about running down your battery.



Enhanced Traditional Watch Mode: Utilize the co-processor in an RTOS environment to continue enjoying your watch with time and date, steps, heart rate, alarms, reminders, and battery indicator for a more capable experience.

To learn more visit:

[Qualcomm.com/wearables](https://www.qualcomm.com/wearables)

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snapdragon wear





Snapdragon Wear 4100+ Platform

Next generation connected smartwatch platform based on our ultra-low power hybrid architecture

Features & Specifications

Main Processor

- 12nm Quad-core Arm Cortex A53 up to 2.0 GHz optimized for wearables

Co-Processor

- Designed to support always-on experiences: enhanced ambient mode, sports mode, and traditional watch mode.
- Works alone or in conjunction with the main processor
- Small footprint: ~21mm²
- Cortex M0 processor
- Integrates custom designed SRAM, dedicated PMU, a deep learning engine for custom workloads, and range of IOs
- Runs highly efficient event-driven RTOS

GPU

- Adreno 504 GPU (up to 320MHz): Open GL ES3.1 optimized power for wearables

DSP

- Dual Qualcomm® Hexagon™ QDSP6 v56
- Dedicated MDSP for modem and GPS
- Dedicated ADSP for Open Sensor Execution Environment (SEE) and audio

Memory

- 10x10 ePoP memory
- Supports between 4x4 and 8x8 configurations
- 750 MHz LPDDR3, eMMC 4.5

Display

- Up to 1080p 30fps, optimized for wearables
- Supports MIPI-DSI for the core baseband and SPI for the QCC1110 co-processor

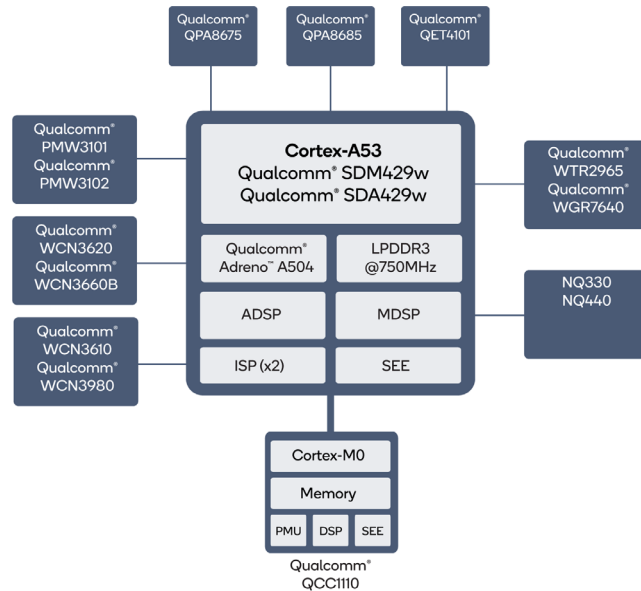
Connectivity

- Bluetooth 5.0 (Qualcomm® WCN3610, Qualcomm® WCN3980)
- Bluetooth 4.2 (Qualcomm® WCN3620, Qualcomm® WCN3660B)
- 802.11a/b/g/n (2.4GHz)
- Qualcomm® Location technology
- USB 2.0
- Integrated NFC with support from NXP

To learn more visit:

Qualcomm.com/wearables

Snapdragon Wear 4100+ Block Diagram



Modem

- Integrated X5 LTE Global Mode modem, supporting LTE FDD, LTE TDD, 1x Adv, EV-DO Rev. A, TD-SCDMA and GSM/EDGE
- Right sized for wearables to operate in Cat 4, 3 and 1 configurations
- Approved by >100 global network operators
- Qualcomm® Snapdragon™ modem and GPS RF (Qualcomm® WTR2965)
- RFFE with Gallium Arsenide PAs (Qualcomm® QPA4360, Qualcomm® QSW8573, Qualcomm® QET4101)

Power Management

- New wearable PMIC optimized for low power and high integration
- Integrates battery charging, fuel gauge, and haptics driver functionality
- 5.05mm x 5.64mm

Location

- Gen 8C Satellite: GPS, Glonass, Beidou, Galileo
- Terrestrial: Wi-Fi, Cellular
- Qualcomm® Sensor Assisted Positioning for Wearables

Audio & Voice

- Qualcomm® Voice Suite
- Qualcomm® Voice Noise Suppression and Echo Cancellation
- Qualcomm® Voice Activation
- Qualcomm Aqstic™ audio codec and speaker amplifier

RF Front End

- Qualcomm® RF Front End (RFFE) Solution
- MMPA covering all LTE bands (Qualcomm® QPA8675)
- TX FEM (GSM PA+SPI14T switch) (Qualcomm® QPA8685)
- APT Tracker (Qualcomm® QET4101)

Security Features

- Qualcomm® Processor Security features
- Qualcomm® Trusted Execution Environment (TEE) 4.0.5

Operating System

- Snapdragon Wear 4100+ supports Wear OS by Google
- Snapdragon Wear 4100 supports Wear OS by Google and Android Open Source

Qualcomm Hexagon, Qualcomm WCN3610, Qualcomm WCN3620, Qualcomm WCN3980, Qualcomm WCN3660B, Qualcomm Location, Qualcomm Snapdragon, Qualcomm WTR2965, Qualcomm QPA4360, Qualcomm QSW8573, Qualcomm QET4101, Qualcomm Aqstic, Qualcomm Voice Activation, Qualcomm Voice Suite, Qualcomm Voice Noise Suppression and Echo Cancellation, Qualcomm RF Front End, Qualcomm Processor Security, Qualcomm Trusted Execution Environment, Qualcomm QPA8675, Qualcomm QPA8685, Qualcomm PMW3101, Qualcomm PMW3102 and Qualcomm WGR7640 are products of Qualcomm Technologies, Inc. and/or its subsidiaries.

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