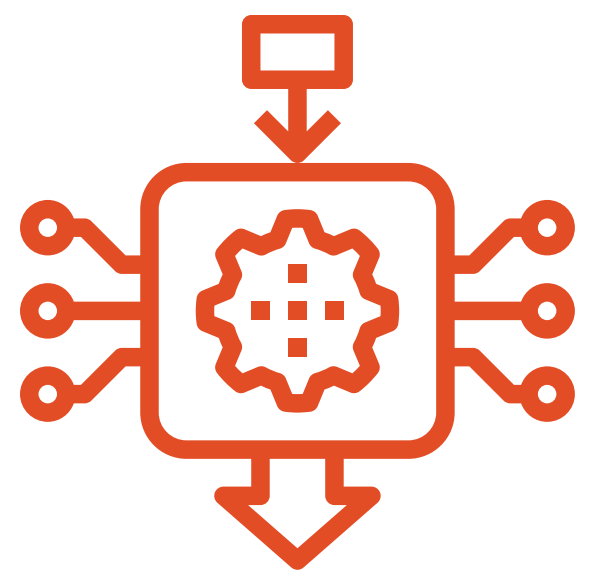


A path-breaking advanced medical visualization Edge AI platform with superior computing, rich high-performance I/O, and 5G connectivity capabilities, designed to build next-gen MedTech solutions.

The iDhi™ platform comprises the ISQ8250 small-form-factor System On Module (SOM) coupled with a customizable carrier board with high-speed storage, LAN/WLAN/WWAN connectivity, and interfaces to cameras, displays, medical sensors, and 3rd party healthcare appliances. It leverages Qualcomm's Snapdragon QCS8250 System-On-Chip's powerful heterogeneous compute capability of 10 Trillion Operations Per Second (TOPS) to build disruptive Edge AI solutions.

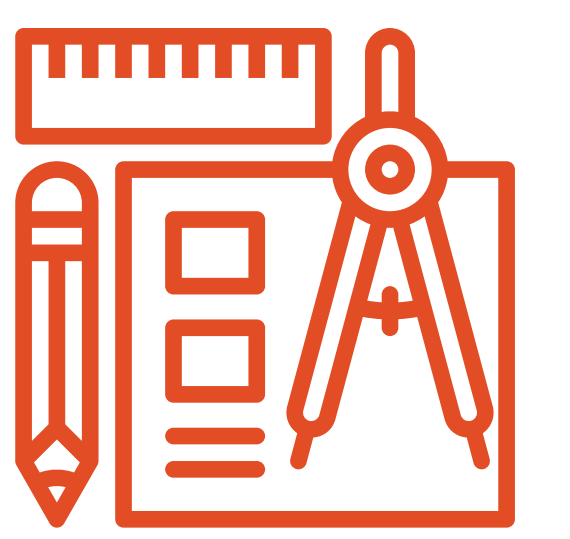


DATA SHEET



Real-time insights

Provides inferences with **glass-to-glass latencies as low as 150ms** to serve mission-critical scenarios, using highly accurate trained computer vision and AI models deployed at the edge, leveraging the SoC's heterogenous compute capability



Designed for medical environment

Compliant with **MOPP** and **IEC 60601-1** standard for safety and essential performance of medical electrical equipment, FDA guidelines of hardware-based uninterrupted video link between camera and display through watchdog, and **FDA** and **IEC62000** immunity standards for EMI, EMC, and ESD

Key Benefits

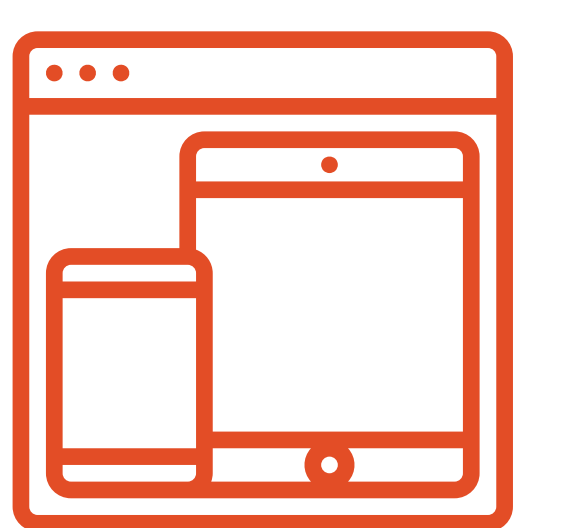


Multi-layer security

Hardware level – Provides encryption through TrustZone(TZ) feature of QCS8250

Cloud level – Enables Role based access control and device provisioning to enable only authorized devices to communicate with the cloud platform

Chipset level – offers end to end encryption with an external cryptochip that is fully isolated from the SoC and acts as a secure store for all security certificates



Highly customizable platform

The platform offers high degree of modularity with standard high-performance interfaces like custom SMARC and M.2 connectors for hardware extensions like compatible storage, WWAN, AI accelerators, and various video inputs. It provides customizable splash screen and launcher to reflect the branding guidelines of the OEM.

Key Features



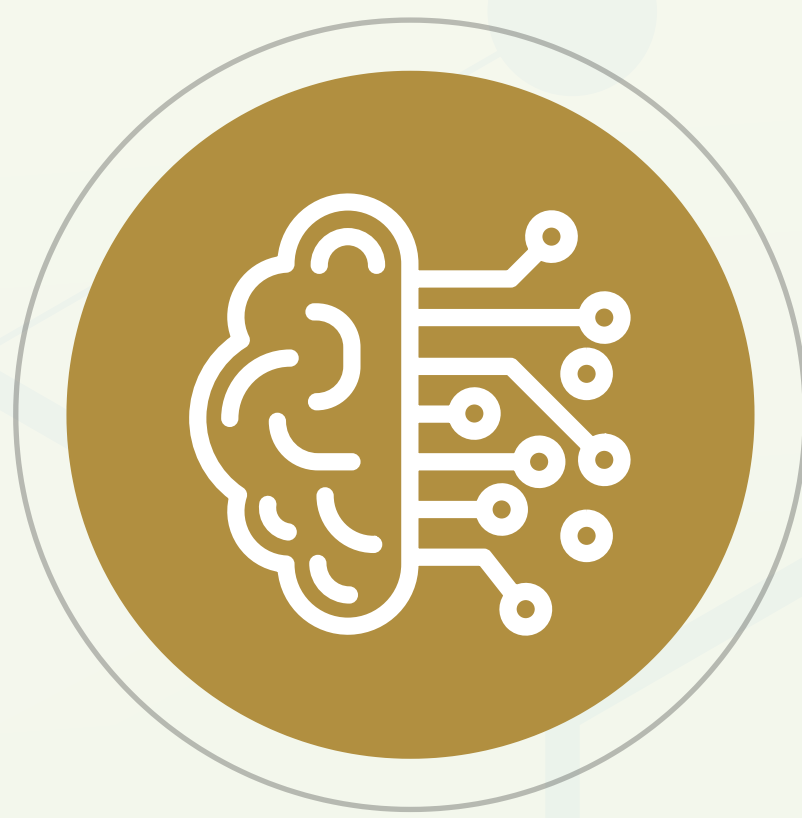
Multiple Video Streams

Supports multiple cameras simultaneously, allowing rich multimedia processing and assimilating multiple streams that can then be displayed on multiple output screens



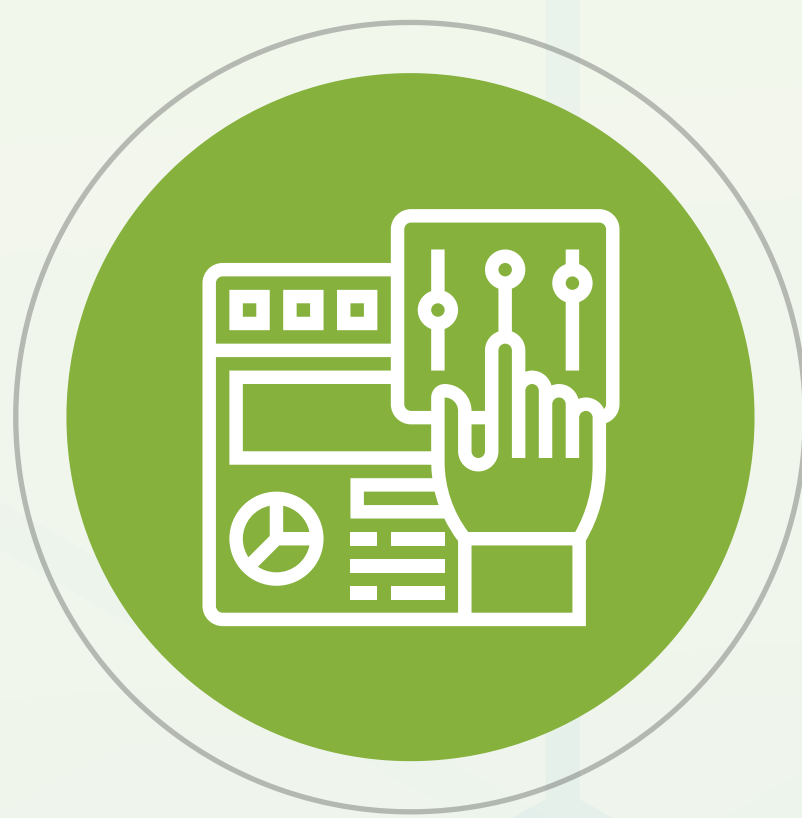
Global Connectivity

Supports global 5G and 4G bands (RM500Q-GL) with high quality end-to-end connectivity that enables low latency, high precision insights



AI/ML capabilities

Assimilates high bandwidth videos and makes inferences with edge AI models by efficiently running complex video/image processing algorithms and AI/ML workloads using the platform's heterogenous compute power



High-performance interfaces

Provides multiple types of interfaces – USB, HDMI, PCIe and MIPI – to support video input through any camera and industry-standard M.2 B key connectors for additional AI-based acceleration hardware



Robust video processing

Offers rich android multimedia middleware that support a wide range of video/audio processing tasks and analytics engines like FastCV to implement and accelerate a wide range of multi-camera/display medical video algorithms in GPU



Cloud agnostic and ModelOps capabilities

Fully integrated with a medical grade HIPAA/GDPR compliant cloud backend. Supports public (AWS/Azure) cloud components or can connect to OEM specific private cloud. Leverages iFusion.ai™ ModelOps capabilities for end-to-end model orchestration.

Applications

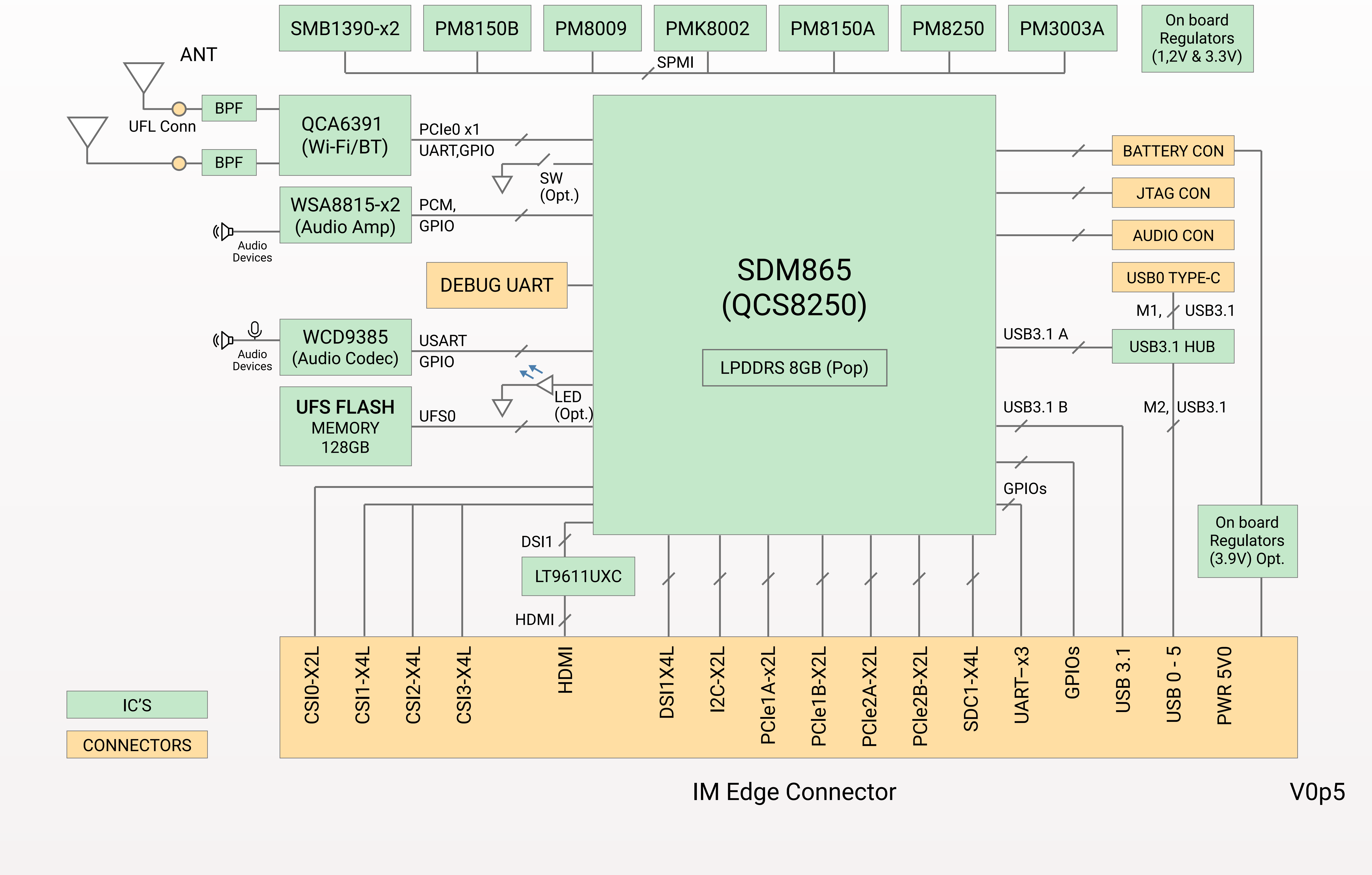
Building advanced MedTech Devices

- Diagnostic equipment
- Surgical assistance devices
- Robotic surgery systems

Miniaturizing large form factor devices to small form factor devices

Contactless vital sensing for telehealth from facial images

Workflow optimization through asset monitoring, PPE tracking, idle time, and calibration



Hardware Specifications

Components	Descriptions
Processor	Kryo 585-64bit with 4MB L3 Cache, (Kyro gold 2.419 GHz with 256KB L2)*3, (Kyro gold 2.842 GHz with 512KB L2)*1 and (Kyro silver 1.8 GHz with 128KB L2) *4
Memory and Storage	System memory: 8GB LPDDR5 POP UFS memory: 128GB
OS	Android 10
Connectivity: WWAN	4G/5G through RM500Q-GL(Option)
Connectivity: WLAN	Wi-Fi 6 – 802.11ax 2×2 MU-MIMO Wi-Fi / BT 5.1
Peripheral interfaces	Camera: USB, DVI, HDMI MIPI-CSI Display: DVI, HDMI, DisplayPort and MIPI-DSI High-Speed I/O: USB 3.x, PCIe
Connectivity LAN	Gigabit Ethernet
Expandable storage	NVME/SATA SSD slot
Hi-Performance Expansion	M.2 slot with USB3.x & 2-lane PCIe Gen 3
Antennas	2X2 MIMO for 4G/5G , 2X2 for Wi-Fi/BT
Power Input	12V DC
Video encoding	Up to 4K 120 fps 10-bit: H.265
GPU	Adreno 650, Fmax 587MHz - 2X2K 60fps UI, OpenGL ES 3.2, Vulkan1.1, DX12FL12.1, OpenCL 2.0 full profile
Digital-signal processing/NPU	Compute DSP with Hexagon Vector extensions (dual-HVX) and Hexagon CP2.0, Dedicated NPU230
Security	SPU 240, Secure boot3.0 using Android Strongbox and iUICC, secure debug, secure key provisioning, TrustZone, Qualcomm® Trusted Execution Environment 5.0, hardware-supported KeyStore Crypto engine v5 (CE5), DRBG/PRNG (FIPS-compliant), inline crypto engine (FIPS- compliant) Secure file system, Fast trusted storage, DRM support in Hardware
Audio	Built-in Audio Codec, Support for Multiple Digital MIC/MIC-Arrays, Stereo Speaker outputs, Qualcomm Fluence Pro audio signal processing (echo, noise, beamforming, beam tracking), Enhanced 3rd party front-end audio processing
SoM interface	Custom SMARC
Dimension	SoM – 100mmX50mm. Carrier – 23.8 cm X 20 cm
Peripheral Compatibility	Camera: Stryker – (DVI interface), AIDA – 100 (HDMI interface), Customized IR camera (USB 3.1) Displays: Waveshare AMOLED FHD HDMI display with touch Storage: Western Digital NVMe SSD – SN500, SN550 WWAN: QUECTEL – RM500Q – GL (Worldwide 4G/5G support)

Software Specifications

Components	Descriptions
OS	Andriod-10, QCS8250LA1-0-AP-Standard-OEM/master/r00013.1
Compute Power	10 TOPS cumulative (Octa-core APSS, DSP, NPU, GPU, DPU, VPU)
Imaging	OpenCL 2.0 profile, OpenGL 3.2 profile, Vulkan 1.1, OpenCV accelerated by fastCV
Board Support	Optimized bootloader and drivers for all listed peripherals
Package (BSP)	Fluence/Acoustic voice suite (use case like Keyword spotting, Voice-based UI)
Smart Voice	Object detection Object tracking Image segmentation
Reference Apps	SuperPoint, LSTM, etc.
Reference Algorithms	Innominds ARI MDM support
Mobile Device Management (MDM) support	AWS IoT core and Azure Device provisioning service
Device provisioning	AWS IoT and Azure IoT
Device management Edge Agent	AWS Green grass, Azure IoT edge service, and Customized OEM specific edge agents
ML ops	AWS Sagemaker , Azure ML and iFusion
OTA updates	Android OS updates, Security patches, Device specific application updates
Custom third party integration	Hospital management systems , ERP modules

SDKs

Components	Descriptions
Hexagon DSP SDK	Designed to optimize the features and performance of multimedia software Helps allow audio, imaging, embedded vision, and heterogeneous computing acceleration on the Hexagon DSP embedded in Qualcomm Technologies processors to create compelling multimedia user experiences
Qualcomm® Neural Processing SDK	Optimizes deep learning processing performance across available resources to achieve superior edge computing experience
Qualcomm® Computer Vision SDK	Offers a mobile-optimized computer vision (CV) library, enabling use cases like object detection, object tracking, & image segmentation
Qualcomm Spectra 480 Image Signal Processor (ISP)	Supports up to 12 cameras by D-PHY and 18 cameras by C-PHY (seven concurrent)
SNPE SDK	Enables trained AI/ML models execution on the edge

About Innominds

Innominds is an AI-first, platform-led digital transformation and full cycle product engineering services company headquartered in San Jose, CA. Innominds powers the Digital Next initiatives of global enterprises, software product companies, OEMs and ODMs with integrated expertise in devices and embedded engineering, software apps and product engineering, analytics and data engineering, quality engineering, and cloud and devops, security. It works with ISVs to build next-generation products, SaaSify, transform total experience, and add cognitive analytics to applications.