Based on the Qualcomm® Snapdragon™ 624 Processor (SDA 624)

Qualcomm® snapdragon™

eragon 624

Subject to change without prior Notice

About eInfochips

eInfochips is product engineering services company offering technology consulting and product design services in multiple industry verticals like aerospace and defense, security and surveillance, medical and healthcare, industrial and home Automation, consumer electronics and more.

eInfochips is a Qualcomm Snapdragon Technology Partner (STP) offering turnkey product designs on multiple Snapdragon SoCs and have enabled global customers with Qualcomm based product designs.

Engineering Highlights

20+ Years of experience in system design
1700+ Engineering professionals
10 Design centers spread across USA & India
500+ Product designs
35+ Product designs on Qualcomm
15M+ Product deployments across globe
ISO 9001 and CMMi L3 compliant processes

eInfochips Eragon 624

Eragon 624 is a System-on-Module (SoM) based on Qualcomm® Snapdragon™ 624 (SDA 624) System on Chip (SoC) and offers premium 1080p90 video support with HEVC capture and playback. Eragon 624 offers unmatched power efficiency and is an ideal choice for battery operated product designs. The SoM can be further customized by eInfochips to match specific customer requirements.

Eragon 624 Development Kit is the combination of SoM and carrier board that enables OEMs and engineers to evaluate performance of Snapdragon 624 for their product designs and helps them to accelerate their time to market.

Home Automation

UAV and Robotics
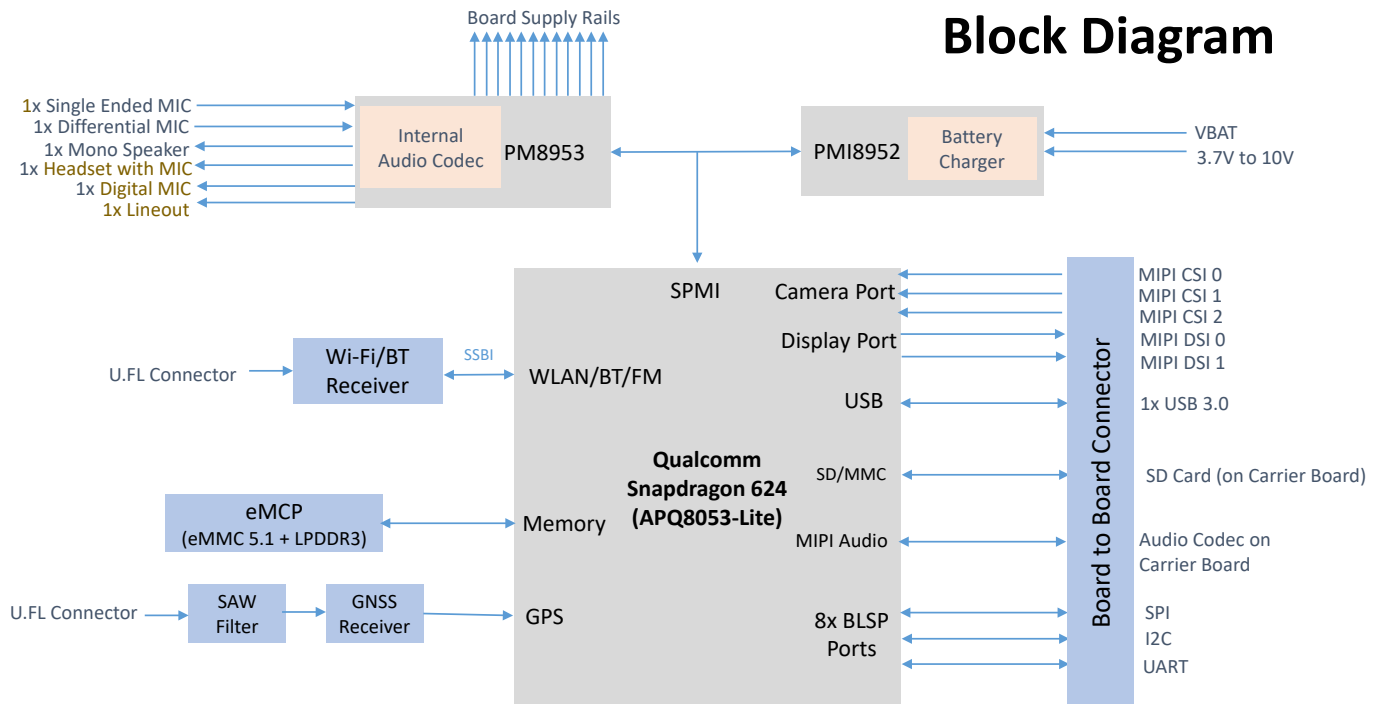
4K Cameras

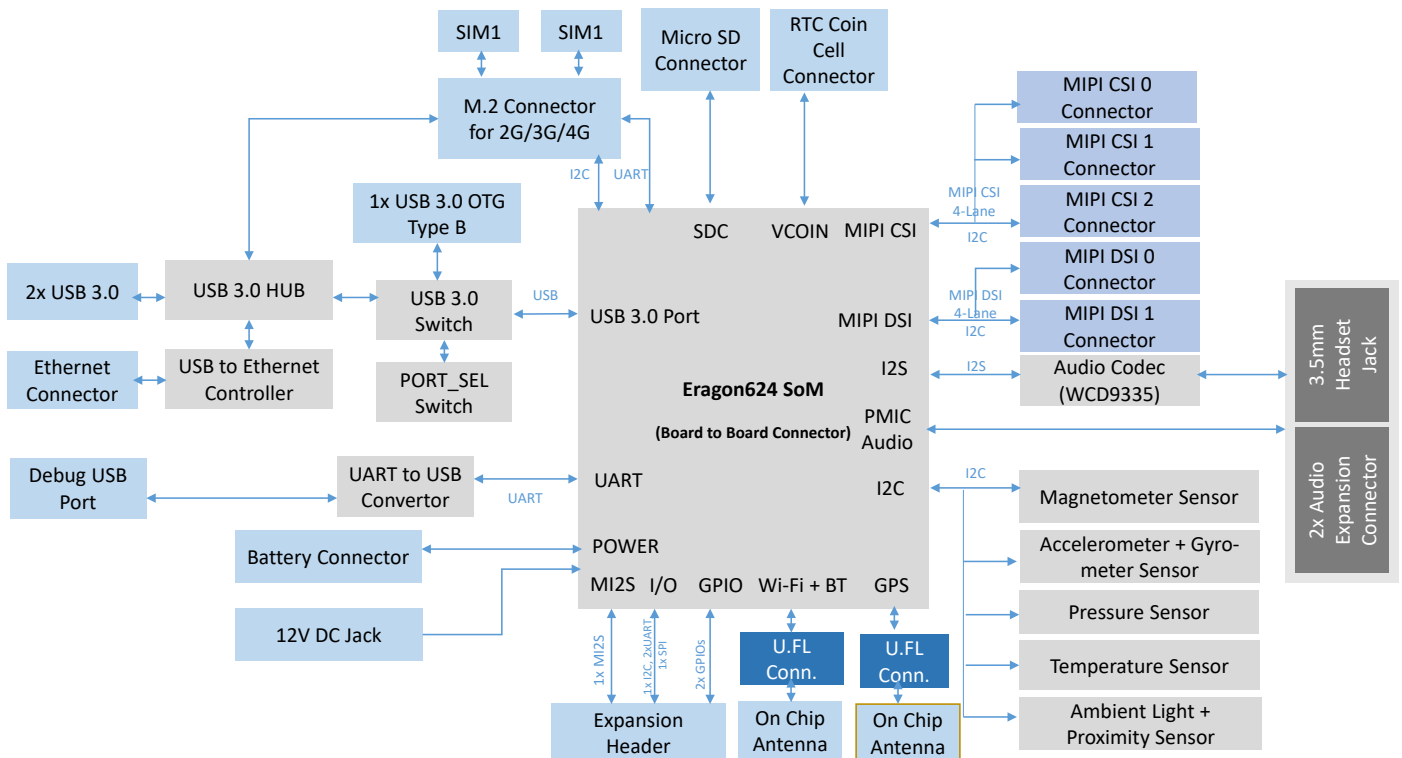Human Machine Interface

(HMI)

Medical Imaging

Machine Vision

Video Conferencing Systems

Industrial IOT

System on Module Block Diagram

Board Supply Rails

1x Single Ended MIC
1x Differential MIC
1x Mono Speaker
1x Headset with MIC
1x Digital MIC
1x Lineout

Internal Audio Codec — PM8953

PMI8952 — Battery Charger

VBAT
3.7V to 10V

U.FL Connector — Wi-Fi/BT Receiver — SSBI

eMCP (eMMC 5.1 + LPDDR3)

U.FL Connector — SAW Filter — GNSS Receiver

Qualcomm Snapdragon 624 (APQ8053-Lite)

- SPMI
- WLAN/BT/FM
- Memory
- GPS

- Camera Port
- Display Port
- USB
- SD/MMC
- MIPI Audio
- 8x BLSP Ports

Board to Board Connector:
- MIPI CSI 0
- MIPI CSI 1
- MIPI CSI 2
- MIPI DSI 0
- MIPI DSI 1
- 1x USB 3.0
- SD Card (on Carrier Board)
- Audio Codec on Carrier Board
- SPI
- I2C
- UART

Development Kit Block Diagram

- SIM1
- SIM1
- Micro SD Connector
- RTC Coin Cell Connector

M.2 Connector for 2G/3G/4G — I2C, UART

1x USB 3.0 OTG Type B

2x USB 3.0 — USB 3.0 HUB — USB 3.0 Switch — USB

Ethernet Connector — USB to Ethernet Controller — PORT_SEL Switch

Debug USB Port — UART to USB Convertor — UART

Battery Connector

12V DC Jack

Eragon624 SoM (Board to Board Connector)

- SDC
- VCOIN
- MIPI CSI
- MIPI DSI
- USB 3.0 Port
- I2S
- PMIC Audio
- UART
- POWER
- I2C
- MI2S
- I/O
- GPIO
- Wi-Fi + BT
- GPS

MIPI CSI 4-Lane / I2C:
- MIPI CSI 0 Connector
- MIPI CSI 1 Connector
- MIPI CSI 2 Connector

MIPI DSI 4-Lane / I2C:
- MIPI DSI 0 Connector
- MIPI DSI 1 Connector

I2S — Audio Codec (WCD9335)

3.5mm Headset Jack

2x Audio Expansion Connector

I2C:
- Magnetometer Sensor
- Accelerometer + Gyro-meter Sensor
- Pressure Sensor
- Temperature Sensor
- Ambient Light + Proximity Sensor

1x MI2S / 1x I2C, 2xUART, 1x SPI / 2x GPIOs

Expansion Header

U.FL Conn. — On Chip Antenna

U.FL Conn. — On Chip Antenna

Datasheet Rev 1.0

Processor
- Qualcomm® Snapdragon 624 (APQ8053-Lite-1.8GHz)
- Power Management IC with Battery Support

Memory and Storage
- 3GB LPDDR3, 32GB eMMC 5.1 (eMCP)
- MicroSD

Connectivity

Wi-Fi
- Qualcomm® Wi-Fi 802.11a/b/g/n/ac 2.4/5Ghz
- Antenna – U.FL connectors on SOM; Chip Antenna on Carrier Card (SOM to Carrier Card Connection via U.FL cable)

Bluetooth
- Bluetooth 4.2 (Classic & BLE)

Location
- GPS (GNSS, GLONASS)
- U.FL connector on SOM, Chip Antenna on Carrier Card (SOM to Carrier Card Connection via U.FL Cable)

- Optional- M.2 based 4G LTE Module Support

USB
- 2x USB 3.0 via USB 3.0 Hub
- 1x Ethernet via USB 3.0 Hub (100/1000Mbps)
- USB 3.0 OTG via USB 3.0 Switch (Mutually exclusive with 2x USB 3.0 and 1x Ethernet)

Audio (Built-in or Discrete (default))
- Built-in Audio Codec Support (PMIC) – On Header
  - 1x Single ended MIC
  - 1x Headset with MIC
  - 1x Differential MIC
  - 1x Digital MIC
  - 1x Lineout
  - 1x Mono speaker

- Discrete Qualcomm® Audio Codec Support
  - 2x Speaker Interface Outputs
  - 5x Analog MIC
  - 3x Digital MIC
  - 1x 3.5mm Audio Jack with MIC
  - 1x Ear-piece
  - 2x Line-out

Camera
- 3x 4-lane MIPI-CSI Ports (2x Simultaneous support)
- Support for 16MP and 13 MP Image Sensors

Display
- 2x 4-lane MIPI-DSI
- eInfochips Display Adapter Card Support (1080p)
- Full HD (1920 x 1080) 60 fps; 16/18/24 bpp RGB
- Wi-Fi Display (WFD): 1080p30

Video

Encode
- Supported Formats: H.265 (HEVC), H.264 and VP8
- Supported Resolution: 1080p @ 90fps, 1080p @ 60 fps (H.264, H.265, VP8)

Decode
- Supported formats: H.264, H.265, VP8, and VP9
- Supported Resolution: 3840x2160 (4K) @ 30 fps (H.264, H.265), 1080p @ 60 fps (H.264, H.265, VP8)

Sensors
- 1x Accelerometer and Gyroscope
- 1x Magnetometer
- 1x Ambient Light & Proximity Sensor
- 1x Temperature Sensor
- 1x Pressure Sensor

Others
- 2x UART, 1x SPI, 1x I2C, 2x GPIO, 2x I2S provided on expansion header
- 1x 4K HDMI Input Support via a HDMI to CSI add-on board
- 1x DSI to HDMI 1.4b (1080p30) Adapter Card

Power specification
- Power supply input: 12V/5A input from 12V DC Power Adapter (included in kit)
- Optional - Battery Support - 3.7V Li-Po Battery

Mechanical specification
- SOM - 60mm x 35mm
- CARRIER - 120mm x 130mm

Temperature Specification
- Operating Temperature Range: -30*C to +85*C

Operating System
- Android 8.1
- Linux (Planned)

Kit Contents
- 1x System on Module based on Snapdragon 624
- 1x Carrier Board
- 1x LCD (MIPI-DSI, 1080p)
- 1x Audio Board (Using Qualcomm WCD9335 Audio Codec)
- 1x Base Plate
- 1x Power Adapter
- 1x Ethernet Cable
- 1x USB Cable
- 1x Quick Start Guide

Add-on Accessories
- Camera Board

Orderable Part
- **SOM:** EIC-Q624-200
- **Development Kit:** EIC-Q624-210
- **Camera Board:** EIC-Q624-CAM