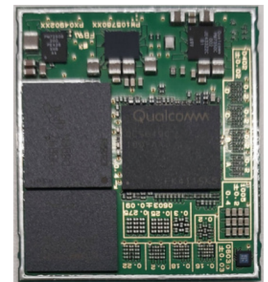


WHITE PAPER

GETTING STARTED GUIDE

# Qualcomm 6490 SoM - EP200Q



# What is EP-200Q?

## 1) Silex Technology's New Offering: System-on-Module

Silex Technology is adding SoM, System-on-Module, to its product portfolio aiming to serve our customers better to enable embedded devices quicker and easier. The recent addition of the product is the EP-200Q, SoM based on Qualcomm's QCS6490 SoC, System-on-Chip, designed for edge devices requiring high-performance, but yet consuming less power.

Silex Technology is known as the Wi-Fi expert providing its dedicated customer support to enable embedded devices with reliable Wi-Fi connectivity for commercial industries such as healthcare, logistics and factories, where the robust wireless connection is important for their business.

It is very often that customers struggle with integrating Wi-Fi driver into their preferable SoC, operating system or OS distribution. In the meantime, it is also often that customers seek our advice to choose the right platform that can be suitable for their intended applications. Silex Technology now offers its SoM to offer our dedicated support to customers developing their edge devices with reliable and robust Wi-Fi connectivity.

## 2) What is EP-200Q?

EP-200Q is a SoM enabled by QCS6490 from Qualcomm. It integrates necessary components for CPU subsystem such as a DDR memory, an eMMC storage and a power management unit. The SoM is fully validated by Silex Technology so that customers do not need to design them in from scratch, validate their designs and qualify all necessary components. The SoM benefits customers who want to adapt to the new SoC platform with a shorter development cycle.

QCS6490 is the powerful SoC with octa-core CPUs, a GPU, an ISP (Image Signal Processor), and DSPs to be used as NPU (Neural Processing Unit) intended for edge AI device. Its ~7W power consumption with Dhrystone benchmark test is remarkable achievement to enable powerful edge devices, even for mobile devices. It also achieves 12 TOPS AI performance, which is suitable for AI inference for machine vision/computer vision at the edge device.

Silex Technology adds its flavor to differentiate from a reference design from Qualcomm enabling Wi-Fi 6E connectivity. EP-200Q's Linux SDK integrates Silex's driver for Wi-Fi 7 module to offer better performance and more efficient Wi-Fi connectivity than Wi-Fi 6E. It also aims to support different radios according to customers' specific needs. For example,

- PCIe access point module for embedded devices operating as Wi-Fi access point.
- SDIO station module for embedded devices concerning its power consumption.
- Other flavors of Wi-Fi modules for better coverage but with lower throughput.

The EP-200Q is the smallest form-factor among QCS6490 SoMs as a computing module. It interfaces with a Wi-Fi module through either PCI express or SDIO.

Silex offers SMARC form-factor EP-200Q-CB, which integrates high-performance and highly reliable Wi-Fi 7 module, SX-PCEBE. Silex is going to provide a carrier board design guidance based on the EP-200Q-CB design so that the customers can easily integrate EP-200Q and SX-PECBE into their products.

### 3) What is EP-200Q for?

The EP-200Q is suitable for edge devices which process imaging data.

- Smart camera with or without edge AI processing
  - visual inspection in factory, warehouse etc...
  - ambient monitoring in healthcare facilities, office buildings, workplaces.
  - human safety monitoring in construction sites, warehouse etc...
- Drones
  - inventory management in warehouses
- Industrial handheld devices
- Video conferencing system
- Middle-end edge computer
- Retail Kiosk

The AI models can be loaded to the EP-200Q for inference at edge devices. The input can be fed from cameras attached to the EP-200Q through MIPI CSI interfaces or USB interfaces, or IP traffic over Wi-Fi or a network.

## 4) Silex's Support Packages

While Qualcomm has made design collaterals available for the public, there are certain things specific to our SoM. It is also possible that building the development environment could take time as it is a little bit involved process.

Silex provides the development package to make the customers' onboarding process easy and seamless. It also provides collaterals to go through the AI model conversion for the QCS6490.

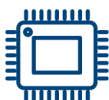


### Development environment package

Linux SDK followed by Android

Qualcomm Linux development environment guide

- Yocto development procedure manual
- Interface manual  
Qualcomm AI-HUB usage guide (operation procedure manual)
- AI/ML development guide (AI porting procedure manual)



### Guidance for product development

- Hardware design
- Device driver integration
- User application development
- Function addition



### Development environment package

Support in cooperation with Qualcomm as part of the EDC program.