

## Qseven® Module with NXP® i. MX6 family processor

# PQ7-M640F

- Ultra low power consumption: 2W (Single core) ~ 6W (Quad core)
- More than 10 years longevity support
- Graphics accelerators built in. Open GL ES2.0, Open VG1.1 supported
- Supports LVDS and Display-port interfaces
- Multi-format of encode & decode
- ARM ECO system to save customers' development time to market



## Specifications

### CPU

NXP i.MX 6Solo, 1 core, 1 GHz, 512KB L2 cache, 1 display, no SATA  
 NXP i.MX 6Dual, 2 cores, 800 MHz, 1MB L2 cache, 3 displays, 1x SATA  
 NXP i.MX 6DualLite, 2 cores, 1 GHz, 512KB L2 cache, 1 display, no SATA  
 NXP i.MX 6Quad, 4cores, 800 MHz, 1MB L2 cache, 3 displays, 1x SATA

### Memory

DDR3L at 1066 MT/s  
 512MB to 2GB

### Storage

eMMC 5.0 onboard flash up to 64 GB

### DisplayPort Interface (DDIO/DDI1)

24-bit Dual Channel LVDS up to 1920x1200@60Hz  
 HDMI 1.4b up to 1080p  
 Video Input Port / Camera Connector

### Audio

I<sup>2</sup>S/HDA interface  
 NXP SGT5000 (on evaluation carrier board) via I<sup>2</sup>S interface

### Ethernet

10/100/1000 GbE

### I/O Interfaces

#### PCIe

1x PCIe x1 Gen2

#### USB

4x USB2.0 HOST  
 1x USB OTG

#### SATA

1x SATA 2.0 (3 Gb/s)

### Other I/O Interfaces

1x SDIO, 2x SPI, 2x I<sup>2</sup>C, , 2x CANBus, 4x UART, 2x GPIO

## Video

### GPU Feature Support

Dedicated 2D Hardware accelerator  
 Dedicated 3D Hardware accelerator, supports OpenGL® ES 2.0 3D  
 Dedicated Vector Graphics accelerator supports OpenVG™ (only i.MX6D and i.MX6Q)  
 Supports up to 3 independent displays with i.MX6D and i.MX6Q  
 Supports 2 independent displays with i.MX6DL and i.MX6S

## Mechanical and Environmental

### Form Factor

Qseven® 2.0

### Dimension

Qseven® module, 70 mm x 70 mm

### Operating Temperature

Commercial: 0°C to +60°C  
 Industrial: -40°C to +85°C

### Humidity

10-90% RH operating, non-condensing  
 5-95% RH storage (and operating with conformal coating)

## Power

### Standard Input

5V DC ±5%

### Power Management

NXP PMIC (PF0100)

### Power Consumption

2W~6W (CPU)

## Operation System

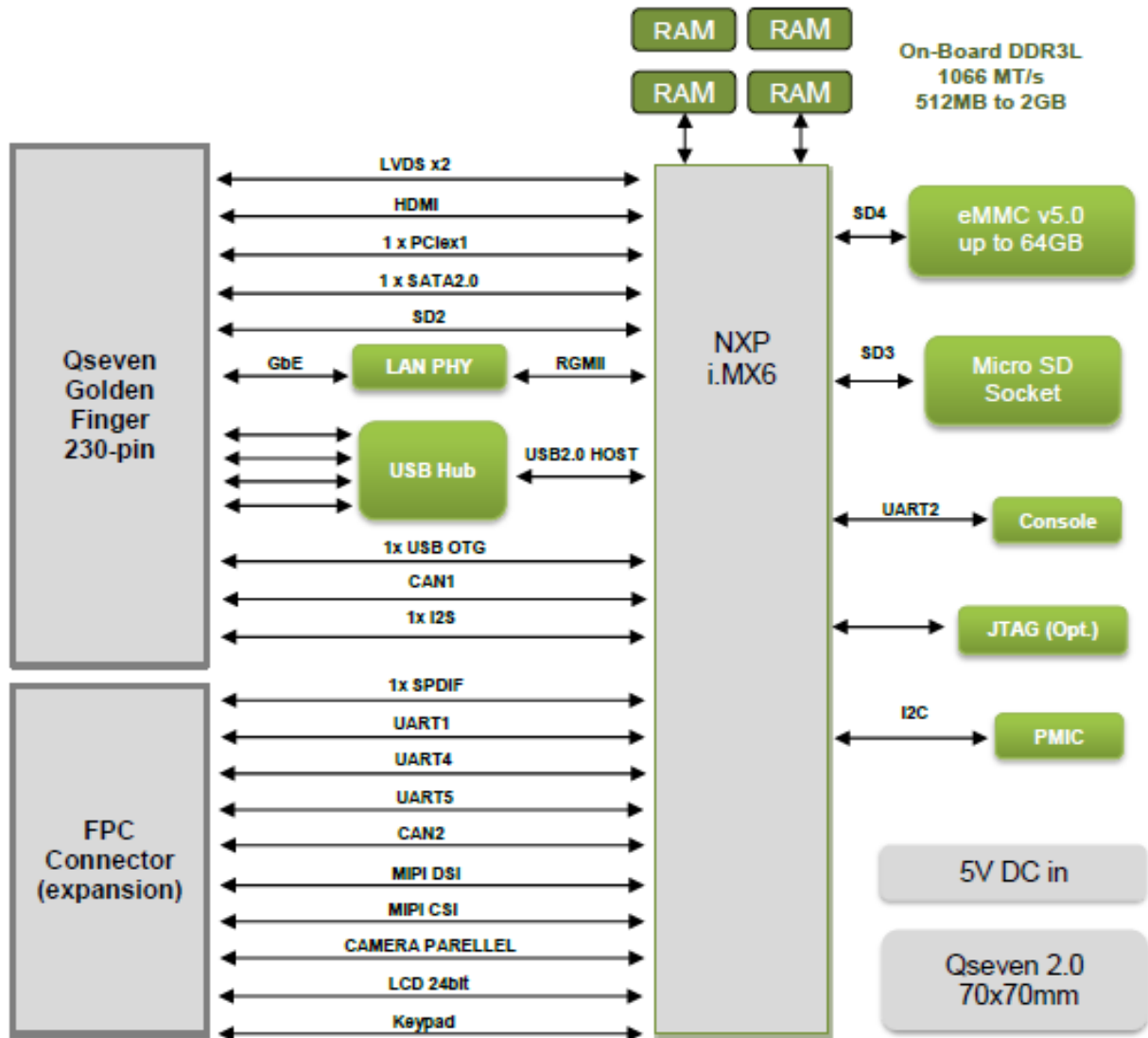
### Standard Support

Linux | Yocto 1.7  
 (BSP: Kerner 3.14.28\_Uboot 2013.10)

# Functional Diagram

PQ7-M640F

Block Diagram



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