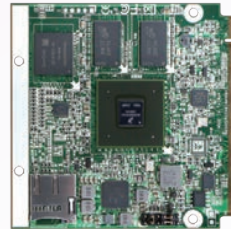# PQ7-M640F

To save valuable customers' development time to market, not only the RISC-based boards, but also the following ECO system which Portwell can provide should be taken into consideration: full functions of CPU Module + Carrier board (Q7, Q7+), ready BSP for Android 4.0 & Linux 3.0.x, QT5 & GTK+ Middleware and advanced Utility (Remote Management, Diagnostic Tool) supported

Qseven® module based on Freescale™ i.MX6 family, ARM™ Cortex-A9, Solo / Dual / Quad core processor with onboard 1GB DDR3 (up to 2GB), PCIe 1-lane interface, VGA, HDMI, single LVDS 1-ch or dual LVDS (18/24-bit) 2-ch and CAN Bus.

Portwell PQ7-M640F (6Q, 6D, 6S) is design as CPU module with series of Qseven form factor. It is based on embedded Freescale™ i.MX6 processor, an ARM® Cortex®-A9 processor, Single-, Dual- and Quad-Core. In connection with external standard IO device, a 80-pin Carrier board PQ7-C100ARM is suggested for the following expansion purpose: 3x UART, 2x I2C, 1x Keypad, 1x CAN bus, interfaces of 1x RGB parallel LCD, 1x MIPI-DSI, 2x MIPI-CSI for camara, 1x SPDIF, 1x ESAI audio and 4x PWM.

FEATURES

- Ultra low power consumption: 2W (Single core) ~ 6W (Quad core)
- Longevity support more than 10 years
- Support Q7+ function (3x UART, CAN, MIPI interface, 2nd LCD interface, GPIO)
- Built-in H/W Graphics accelerators, Open GL ES2.0, Open VG1.1 supported
- 4x independent displays supported. Multi-format of encode & decode
- Portwell ARM ECO system to save customers' development time to market

ORDERING GUIDE

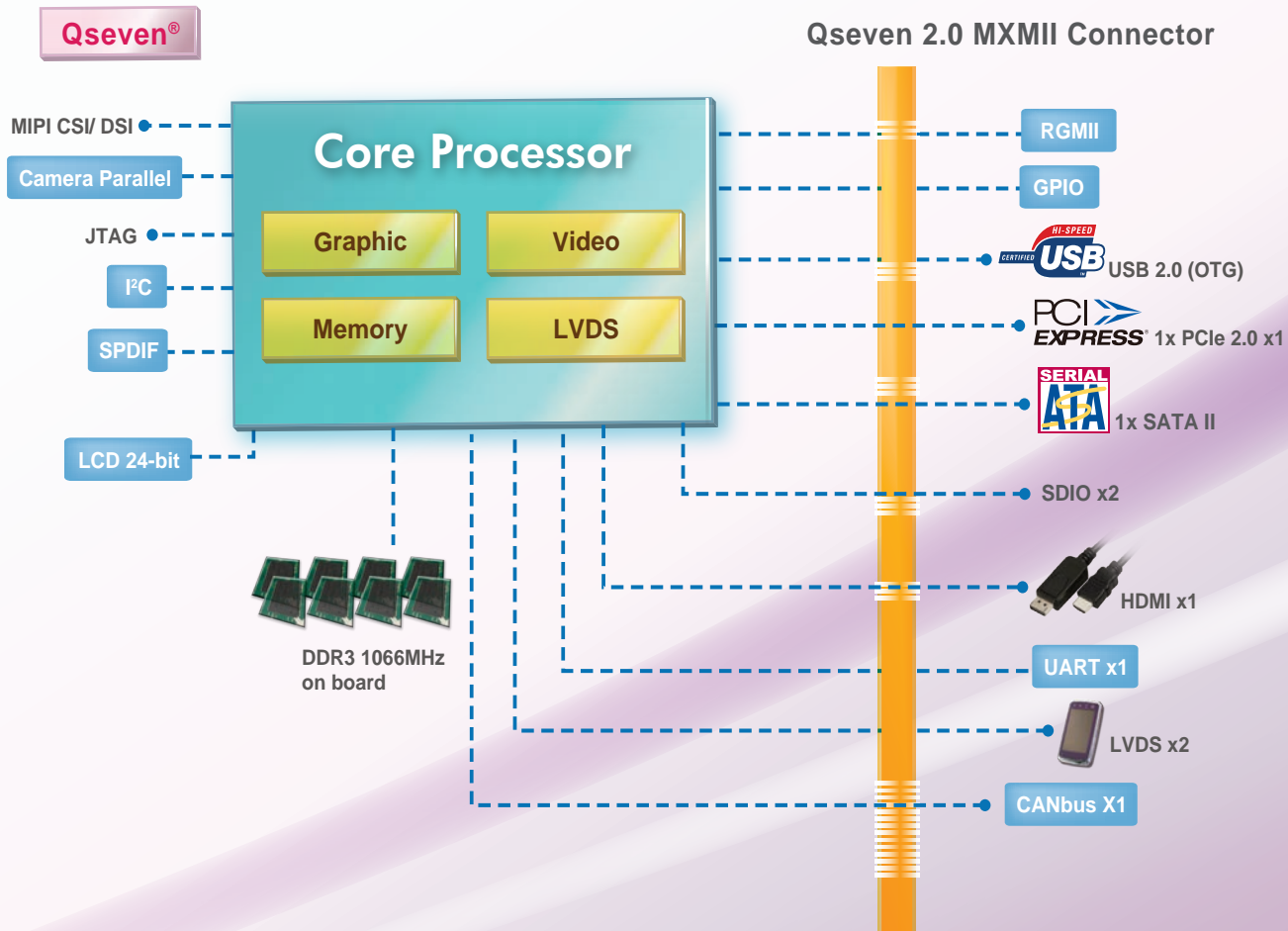|	
AB1-3A50Z	PQ7-M640F, CPU Module board (Quad core)
AB9-3243Z	PQ7-C100ARM, I/O carrier board
By project	PQ7-M620F, CPU Module board (Dual core)
By project	PQ7-M610F, CPU Module board (Single core)

SATA 2.0　USB 2.0　Giga LAN　Watch DOG　H/W Monitor　GPIO

Portwell

M.I.T

PCOM

PQ7

PSMC

Compliance

Qseven®

Qseven 2.0 MXMII Connector

Core Processor

MIPI CSI/ DSI

Camera Parallel

JTAG

I²C

SPDIF

| Graphic | Video |
| Memory | LVDS |

LCD 24-bit

DDR3 1066MHz on board

RGMII

GPIO

HI-SPEED CERTIFIED USB USB 2.0 (OTG)

PCI EXPRESS® 1x PCIe 2.0 x1

SERIAL ATA 1x SATA II

SDIO x2

HDMI x1

UART x1

LVDS x2

CANbus X1

Processor Core

◆ Freescale™ i.MX6 Family, ARM™ Cortex®-A9, Single/Dual/ Quad core processor

Highlights

◆ More than 10 years longevity support
◆ Ultra low power 2W~6W
◆ Rich connectivity for expansion such as 1x CAN bus, interfaces of 1x MIPI-DSI, 2x MIPI-CSI for camara, 1x SPDIF, 1x ESAI audio and 4x PWM.

Memory

◆ Onboard DDR3 1GB support up to 2GB

Platform Thermal Design Power

CPU

| i.MX6 Solo 2W | i.MX6 Dual 4W | i.MX6 Quad 6W |