iWave
Embedding Intelligence

i.MX 8 QM/QP Qseven Development Kit

The i.MX 8 QM/QP (Quad Max/Quad Plus) Qseven Development platform combines the NXP i.MX 8 QM/QP application processor based Qseven SOM and iWave's Generic Qseven Carrier Card to offer maximum performance with higher efficiency for complex consumer, medical and industrial embedded computing applications. The board is highly packed with all necessary onboard connectors to validate i.MX 8 QM/QP SoC features to the fullest.

APPLICATIONS: Intelligent Industrial Control Systems, Industrial Human-Machine interface, Ultra-Portable Devices, Home Energy Management Systems, Portable Medical Devices, 4K Digital Signage, Media streaming, Augmented & Virtual Reality, Home Automation & Entertainment, Drones, Secure POS and Video analytics.
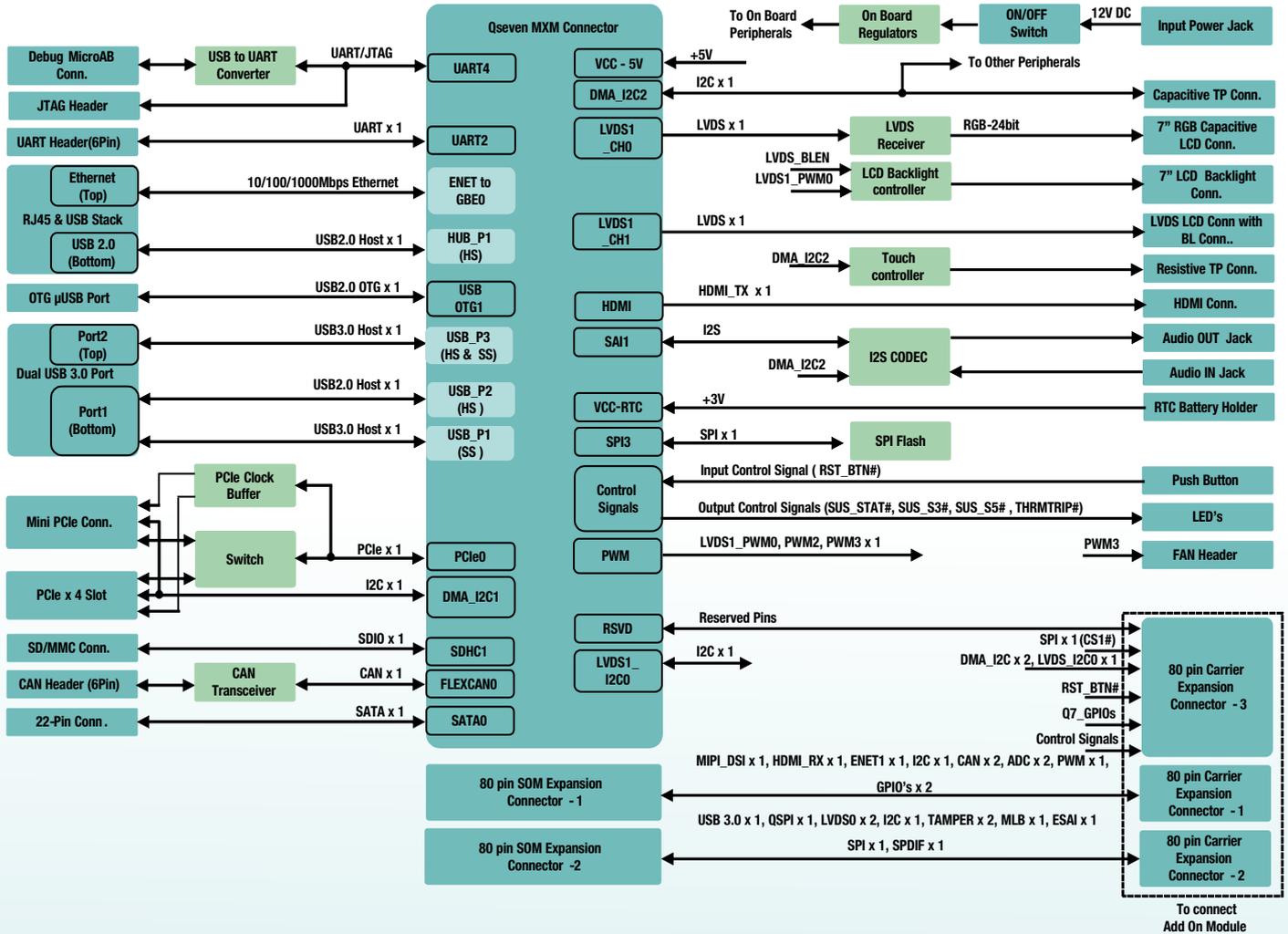
iW-RainboW-G27D HIGHLIGHTS

i.MX 8 QM/QP SoC

4GB LPDDR4 memory (Expandable)

IEEE 802.11a/b/g/n/ac/ax Wi-Fi & BT 5.0

USB3.0, Gigabit Ethernet, PCIe, SATA, LVDS Ios

7" display Kit with cap touch screen

Qseven v2.1 compatible

SPECIFICATIONS

i.MX 8 QM/QP Qseven SOM
Processor:
i.MX 8 QuadMax: 2 X Cortex-A72, 4 x Cortex-A53 & 2 x Cortex-M4F   **i.MX 8 QuadPlus:** 1 X Cortex-A72, 4 x Cortex-A53 & 2 x Cortex-M4F
LPDDR4 - 4GB (Expandable)
eMMC Flash - 16GB (Expandable)
Micro SD slot (Optional)
Octa QSPI Flash - 256MB (Optional)
Gigabit Ethernet PHY Transceiver
USB 3.0 High Speed 4 - Port Hub
IEEE 802.11a/b/g/n/ac/ax Wi-Fi & BT 5.0
MIPI CSI Connector
OS Support:
Linux 5.4.24, Android Pie 9.0.0, Ubuntu 18.04, QNX 7.0.0
Qseven Carrier Board:
Gigabit Ethernet Jack- 1 Port
PCIe x 1 slot / Mini PCIe slot - 1 Port
SATA x 1 Port
USB 3.0 Host Connector - 2 Ports
USB 2.0 Host Connector - 3 Ports
USB 2.0 OTG Connector - 1 Port
SDIO x 1 Port
CAN PHY - 1 Port
7" Cap touch Display

Capacitive Touch screen
SSI/I2S Codec, In/Out Jack
Full Function UART - 1 Port
RTC with backup battery
Debug Micro USB Port
Expansion Connector Interfaces
MIPI DSI x 2
HDMI_RX
ENET1 x 1
I2C x 2
CAN x 2
ADC x 2
PWM x 1
GPIO's
LVDS x 2
USB Host 3.0 x 1
USB Host 2.0 x 1
QSPI x 1
TAMPER x 2
MLB x 1
ESAI x 1
SPI x 1
SPDIF x 1
Control Signals
Power Input: 12V DC
Operating Temperature: 0°C to +70°C
Form Factor: 120mmx120mm Nano ITX Size

i.MX 8 QM/QP Qseven Development Kit Block Diagram

Block diagram showing the following elements and connections:

Qseven MXM Connector ports: UART4, UART2, ENET to GBE0, HUB_P1 (HS), USB OTG1, USB_P3 (HS & SS), USB_P2 (HS), USB_P1 (SS), PCIe0, DMA_I2C1, SDHC1, FLEXCAN0, SATA0, VCC - 5V, DMA_I2C2, LVDS1_CH0, LVDS1_CH1, HDMI, SAI1, VCC-RTC, SPI3, Control Signals, PWM, RSVD, LVDS1_I2C0.

Left side blocks: Debug MicroAB Conn., JTAG Header, UART Header(6Pin), Ethernet (Top), RJ45 & USB Stack, USB 2.0 (Bottom), OTG µUSB Port, Port2 (Top), Dual USB 3.0 Port, Port1 (Bottom), Mini PCIe Conn., PCIe Clock Buffer, Switch, PCIe x 4 Slot, SD/MMC Conn., CAN Header (6Pin), CAN Transceiver, 22-Pin Conn., USB to UART Converter.

Signal labels: UART/JTAG, UART x 1, 10/100/1000Mbps Ethernet, USB2.0 Host x 1, USB2.0 OTG x 1, USB3.0 Host x 1, USB2.0 Host x 1, USB3.0 Host x 1, PCIe x 1, I2C x 1, SDIO x 1, CAN x 1, SATA x 1.

Top right blocks: Input Power Jack (12V DC), ON/OFF Switch, On Board Regulators, To On Board Peripherals, To Other Peripherals, +5V, I2C x 1.

Right side blocks: Capacitive TP Conn., 7" RGB Capacitive LCD Conn., 7" LCD Backlight Conn., LVDS LCD Conn with BL Conn., Resistive TP Conn., HDMI Conn., Audio OUT Jack, Audio IN Jack, RTC Battery Holder, Push Button, LED's, FAN Header.

Middle blocks: LVDS Receiver, LCD Backlight controller, Touch controller, I2S CODEC, SPI Flash.

Signal labels: LVDS x 1, RGB-24bit, LVDS_BLEN, LVDS1_PWM0, LVDS x 1, DMA_I2C2, HDMI_TX x 1, I2S, DMA_I2C2, +3V, SPI x 1, Input Control Signal (RST_BTN#), Output Control Signals (SUS_STAT#, SUS_S3#, SUS_S5#, THRMTRIP#), LVDS1_PWM0, PWM2, PWM3 x 1, PWM3, Reserved Pins, I2C x 1.

Bottom blocks: 80 pin SOM Expansion Connector - 1, 80 pin SOM Expansion Connector -2, 80 pin Carrier Expansion Connector - 3, 80 pin Carrier Expansion Connector - 1, 80 pin Carrier Expansion Connector - 2, To connect Add On Module.

Connection labels: SPI x 1 (CS1#), DMA_I2C x 2, LVDS_I2C0 x 1, RST_BTN#, Q7_GPIOs, Control Signals, MIPI_DSI x 1, HDMI_RX x 1, ENET1 x 1, I2C x 1, CAN x 2, ADC x 2, PWM x 1, GPIO's x 2, USB 3.0 x 1, QSPI x 1, LVDS0 x 2, I2C x 1, TAMPER x 2, MLB x 1, ESAI x 1, SPI x 1, SPDIF x 1.

OS SUPPORT
Linux 5.4.24
Android Pie 9.0.0
Ubuntu 18.04
QNX 7.0.0

DELIVERABLES
i.MX 8 QM Qseven Development Kit Hardware User Manuals

OPTIONAL KITS/Modules
Qseven HeatSink/ Heat Spreader

CUSTOM DEVELOPMENT
BSP Development/OS Porting
Custom SOM/Carrier Development
Custom Application/GUI Development
Design Review and Support

iWave Systems Technologies is an ISO 9001:2015 certified company, head quartered in Bangalore India established in the year 1999. The company focuses on providing embedded solution and services for Industrial, Medical, Automotive and various other Embedded Computing applications. iWave Systems offers wide range of System On Modules and Single Board Computers built using wide range of CPU and FPGA SoC platforms with different form factors such as Qseven, SMARC, SODIMM and HPC by closely working with Tier-1 silicon companies such as NXP, Xilinx, Intel etc.

iWave Systems offers various state of art ready ODM solutions such as Connected Telematic Control Unit / OBD II devices for the automotive edge analytics, Comprehensive ARINC818 solutions for the low latency Aerospace applications and Rugged IP rated performance scalable HMI solutions for Industrial applications.

iWave Systems also provides comprehensive Engineering design services involving Embedded Hardware, FPGA and Software development. iWave offers carrier board and custom hardware development with manufacturing and certification services.iWave's Hardware expertise spans complex board design up to 30 layers; Analog, Digital & RF Designs; FPGA Development up to 3+ million gates and VHDL / Verilog RTL Development & Verification. Our Software expertise ranges from OS Porting, Firmware & Device Drivers Development and Wireless & Protocol Stacks.

Optional items not included in the standard deliverables.

Note: iWave reserves the right to change these specifications without notice as part of iWave's continuous effort to meet the best in breed specification. The registered trademarks are proprietary of their respective owners.

i.MX 8 QuadMax Qseven DevKit
The device can be ordered online from the iWave Website
https://www.iwavesystems.com/product/i-mx-8-qm-qp-qseven-som/
Or from our Local Partners in your region
http://www.iwavesystems.com/about-us/business-partner.html

IW-G27D-Q7-BR-R1.0