iWave
Embedding Intelligence

The Development Platform incorporates Qseven compatible i.MX6 SOM which is based on Freescale's i.MX6 Series 1.0GHz multimedia focused processor and Generic Qseven compatible Development Board. This platform can be used for quick prototyping of any high end applications in verticals like Automotive, Industrial & Medical. Being a nano ITX form factor with 120mmx120mm size, the board is highly packed with all necessary onboard connectors to validate complete i.MX6 CPU features.

APPLICATIONS : Industrial HMI, Automotive IVI, Video & Navigation, Graphical Instrument Clusters, Portable Medical Devices, Intelligent Industrial Control Systems and Home Energy Management Systems
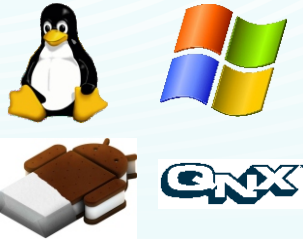
iW-RainboW-G15D-Q7 HIGHLIGHTS

Ideal for Quick Proof of concept (POC) development.

Shortens 60% of the new product development life cycle

Suitable for validation of any R1.2 Qseven compatible module

Quick customization services in a very shorter period

SPECIFICATIONS

i.MX6 CPU Module:
i.MX 6 Quad/Dual/Solo CPU ARM®Cortex™-A9 core @1GHz
2D/3D GPU (OpenGL ES 2.0, OpenVG 1.1) Video Processing Unit(H.264, VC1, Rv10 etc)
RAM: 512MB/1GB DDR3 RAM (Expandable)$^+$
Storage: MicroSD 4GB eMMC Flash (Expandable)

Storage:
SATA 3.0 - 1Port
Standard SD/MMC or WiFi(WYSAAVDX7) -1 Port

Communication Interfaces:
Gigabit Ethernet - 1 Port
USB 2.0 Host - 2 Ports
USB 2.0 OTG - 1 Port
USB Debug Port (Serial to USB conversion)
UART - 2 Ports
4 Wire Resistive Touch
CAN - 2 Ports
4 Port PCIe Gen2.0 Switch: PCIe x 1 Slot Mini PCIe Slot - PCIe Interface - USB Host Interface - UIM Interface - SMB Interface PCIe to USB 3.0 Controller - USB 3.0 Host - 2 Ports
Power Input:12V@ 2A DC Input

Sensors:
3-Axis Accelerometer
Digital e-Compass
Ambient Light Sensor
Altimeter/Barometer

Audio and Video:
Ac'97 codec- Audio IN/OUT Jacks
TV-IN RCA Jack (NTSC/PAL Input)
Parallel Camera ZIF Connector- CSI1 (8Bit)
MIPI Camera Connector
LVDS1 - 7" 800x480 Display with Capacitive TP Backlight PWM Control
HDMI v1.4 - Port
LVDS-2 Connector

On-Board Headers:
10 Pin JTAG Header (Optional)
SPI Header
4x4 Keypad Interface Header
RTC Coin cell Holder

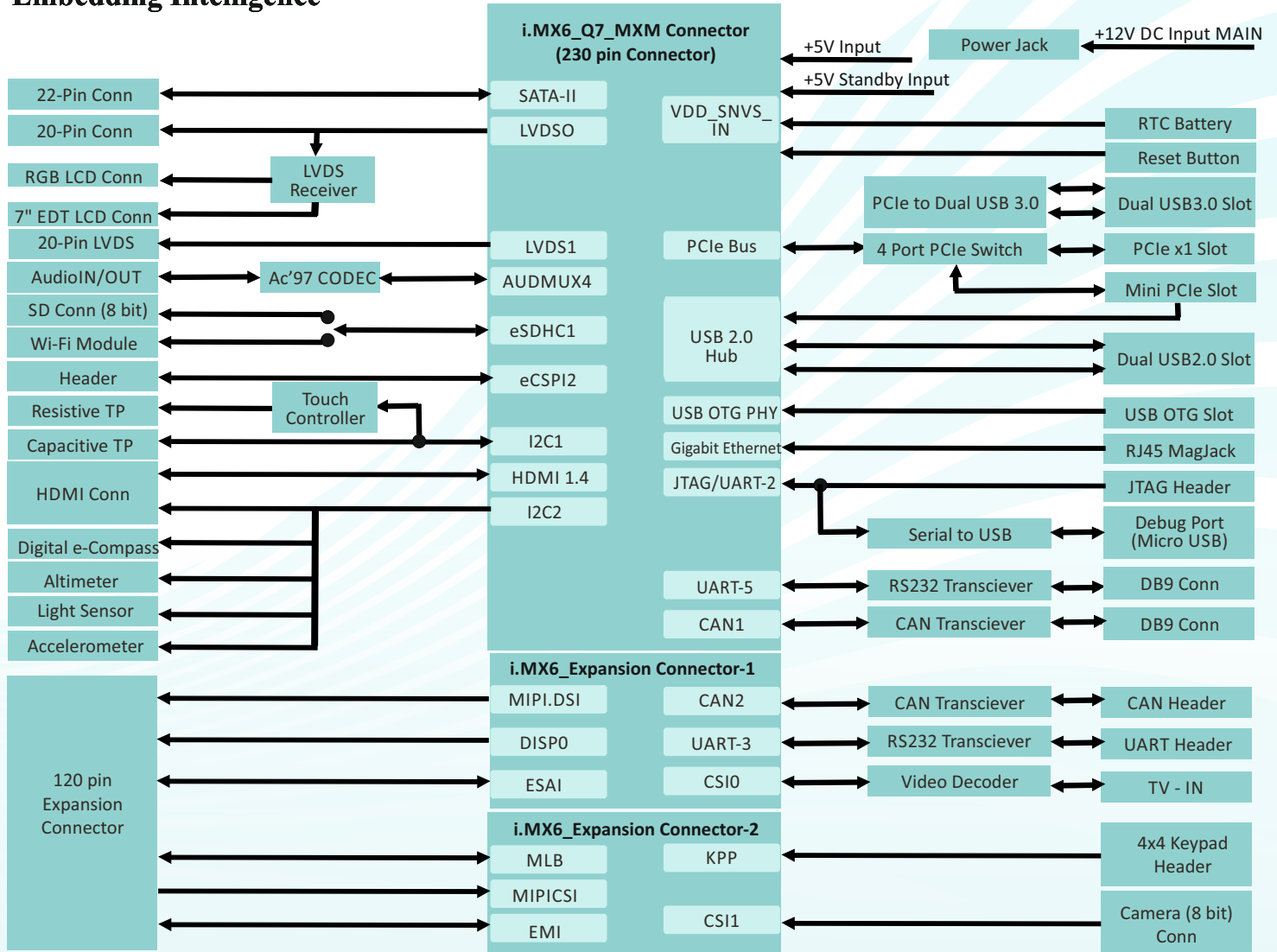| 120 Pin Expansion Connector Interface: |
| --- |
| 24bpp RGB LCDIF |
| ESAI |
| MIPI-DSI |
| MIPI-CSI |
| CSI2 (8 Bit) |
| Memory Interface (Address/Data Muxed) |
| MLB (Supported only in Automotive CPU) |
| **Operating Temperature:** 0 to 60°C |
| **Form Factor:** Nano ITX 120mmx120mm |

$^+$ *512MB DDR3 supported for i.MX6 Solo SOMs and for other CPU configurations 1GB DDR3 is supported*

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Windows Embedded — Silver Partner

freescale Connect — Proven Partner

i.MX6 Qseven DEVELOPMENT BOARD BLOCK DIAGRAM

i.MX6_Q7_MXM Connector (230 pin Connector)

- +5V Input
- +5V Standby Input
- +12V DC Input MAIN
- Power Jack

Left blocks	MXM Connector signals
22-Pin Conn	SATA-II
20-Pin Conn	LVDSO
RGB LCD Conn → LVDS Receiver	
7" EDT LCD Conn	
20-Pin LVDS	LVDS1
AudioIN/OUT → Ac'97 CODEC	AUDMUX4
SD Conn (8 bit)	eSDHC1
Wi-Fi Module	
Header	eCSPI2
Resistive TP → Touch Controller	
Capacitive TP	I2C1
HDMI Conn	HDMI 1.4
	I2C2
Digital e-Compass	
Altimeter	
Light Sensor	
Accelerometer	

Right side:
- VDD_SNVS_IN — RTC Battery, Reset Button
- PCIe to Dual USB 3.0 → Dual USB3.0 Slot
- PCIe Bus → 4 Port PCIe Switch → PCIe x1 Slot
- Mini PCIe Slot
- USB 2.0 Hub → Dual USB2.0 Slot
- USB OTG PHY → USB OTG Slot
- Gigabit Ethernet → RJ45 MagJack
- JTAG/UART-2 → JTAG Header
- Serial to USB → Debug Port (Micro USB)
- UART-5 → RS232 Transciever → DB9 Conn
- CAN1 → CAN Transciever → DB9 Conn

i.MX6_Expansion Connector-1

MIPI.DSI	CAN2 → CAN Transciever → CAN Header
DISP0	UART-3 → RS232 Transciever → UART Header
ESAI	CSI0 → Video Decoder → TV - IN

i.MX6_Expansion Connector-2

MLB	KPP → 4x4 Keypad Header
MIPICSI	
EMI	CSI1 → Camera (8 bit) Conn

120 pin Expansion Connector

OS SUPPORT

Linux Kernel 3.0.35
Android 4.0.4
WEC7
QNX 6.5.0*

* Optional

DELIVERABLES

RainboW-G15D-Q7 Platform
Board Support Packages
Power Adapter
User Manual

OPTIONAL ADD ON MODULES

Camera Add On Module
24BPP LCD Add On Module
Wi-Fi Add On Module
3G and GPS Add On Module

CUSTOM DEVELOPMENT

Custom SOM/ Carrier Card Development
BSP Development/ OS Porting
Design Review & Support

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iWave Systems Technologies, established in 1999, focuses on Product Engineering Services involving Embedded Hardware, Software & FPGA. The company designs and develops cutting edge products and solutions. iWave has been an innovator in the development of highly integrated, high performance, low power and low cost System On Modules and Development Platforms. iWave's expertise has brought out multiple SOMs based on ARM, Freescale, Intel Atom, Marvell and TI Processors.

iWave Systems has won the confidence of its customers over the years by being a reliable partner in developing innovative products. Our engineers combine outstanding System design experience to deliver Quality Solutions. iWave specializes across Industrial, Automotive and Medical domains. We support our customers by being time efficient, which in turn helps our customers accelerate time to market their products. iWave is a Windows embedded Silver partner and a winner of the Partner Excellence Award.

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*Optional items not included in the standard deliverables

Ordering the i.MX6 Qseven Development Board
The board can be ordered online from the iWave Website
http://www.iwavesystems.com/webforms

IW-G15D-Q7-BR-R1.0

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