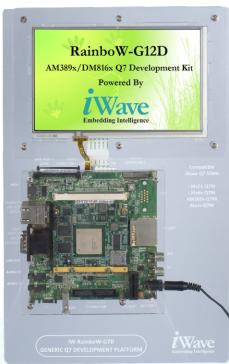# iWave
Embedding Intelligence

Development Platform RainboW-G12D-Q7
AM389x / DM816x Qseven Development Kit

The Development Platform incorporates Qseven compatible AM389x/DM816x SOM which is based on TI's ARM Cortex-A8 based Sitara Processor operating up to 1.5GHz and Generic Q7 compatible Development Board. This platform can be used for quick prototyping of any high end applications in verticals like Industrial, Medical and Networking. Being a nano ITX form factor with 120mmx120mm size, the board is highly packed with all necessary onboard connectors to validate complete AM389x/DM8168 CPU features.

APPLICATIONS: Single-Board Computing, Network and Communications Processing, Industrial Automation, Human Machine Interface, Interactive Point-of-Service Kiosks

iW-RainboW-G12D-Q7 HIGHLIGHTS

TI AM389x/DM8168 ARM Cortex-A8 based Sitara Processor operating up to 1.5 Ghz

Ideal for Quick Proof of concept (POC) development.

Shortens 60% of the new product development life cycle

Suitable for validation of any R1.20 Q7 compatible module

Quick customization services in a very shorter period

Suitable for Wide Range of Applications

SPECIFICATIONS

CPU:
TI AM389x/DM816x CPU @1.5 GHz

RAM:
1GB DDR3 RAM

Storage:
128MB NAND Flash (Expandable)
Micro SD slot / Standard SD slot*-1 Port
SATA 2.0 - 2 Ports

Communication Interfaces:
Gigabit Ethernet - 1 Port (through expansion card)
USB 2.0 Host - 1 Port/3 Ports*
USB 2.0 device - 1 Port
PCIe 2.0 x 2 Lane - 1 Port
RS232 Debug Console - 1 Port

Video OUT:
7"LCD with 4 Resistive Touch
HDMI 1.3 - 1 Port

Connectivity:
802.11b/g/n Wi-Fi*
Mini PCIe Connector

Expansion Connector-1*:
GMII Interface, FF UART, GPIOs, Multichannel Audio Interface

Miscellaneous Headers[+]:
UART Header
SPI Header
Analog HD & SD Video Out Headers

Temperature:
0 to 60°C

Form Factor:
Nano ITX 120x120mm

Power Input:
12V@ 2A DC Input

*Optional

[+] Foot prints only

AM389x/DM816x Qseven DEVELOPMENT BOARD BLOCK DIAGRAM

Block diagram showing connections around the Q7_MXM Connector (230 pin Connector), including:

- +5V Input, +5V Standby Input, Power Jack, +12V DC Input MAIN
- 22-Pin Conn — SATA Port 0 — SATA II-3.0Gbps
- 7-Pin Conn — SATA Port 1 — SATA II-3.0Gbps
- 40-Pin Res TP RGB LCD Conn — RGB-24bit — LVDS Receiver — LVDS0 — LVDS0
- Audio Jacks+ — I2S CODEC+ — McASP2
- MIC/SPKR+
- Resistive TP Conn — Touch Controller — I2C
- Capacitive TP — I2C1
- HDMI Conn — HDMI — HDMI 1.3
- SD Conn (4bit)* — SD/SDIO — SD/SDIO*
- SD Wi-Fi*
- Header — SPI — SPI
- Reset Button, Power Button, RTC — Push Button, Push Button*, RTC Battery
- VCC_RTC
- PCIe 2.0 port x 2 lane — PCIe x1 lane — PCIe x1 Slot Connector, Mini PCIe Connector
- USB Host x 1/ USB 2.0 Hub (4Port) — USB Port 3*, USB Port 4*, USB Port 0, USB Port 2* — USB A-Type Conn, Dual USB Stack Conn
- USB Device — USB Port 1 — USB OTG Mico/mini AB
- JTAG — SJC* — JTAG Header
- UART2 — UART2 — RS232 TxRx — DB9 Conn

80 pin Expansion Connector-1
- TV IN+ — Video Decoder+ — D[7:0] — Video In 0
- Expansion Connector (120-Pin header) — McASP0, PWM, UART0, GPIOs, Video In D[15:0] — McASP0, PWM, GPIOs, UART0
- UART 1,2 — UART 2 / UART 1 — RS232 TxRx — UART Header

80 pin Expansion Connector-2
- McASP1 — McASP1
- GMII Interface — EMAC1
- HD Video Out — HD Video Out — Header+
- SD Video Out — SD Video Out — Header+
- Video In1 — Camera Interface-8bit — Camera Conn+

* Optional
+ Foot prints only

OS Support

Linux 2.6.37
Android 2.2*

* Optional

Deliverables

RainboW-G12D Platform
Gigabit Ethernet Expansion Card
Board Support Packages
Power Adapter, User Manual

Optional Add On Modules

Wi-Fi Add On Module
3G Add On Module

Custom Development

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

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 AM389x/DM816x Qseven Development Board

The board can be ordered online from the iWave Website
http://www.iwavesystems.com/webforms

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