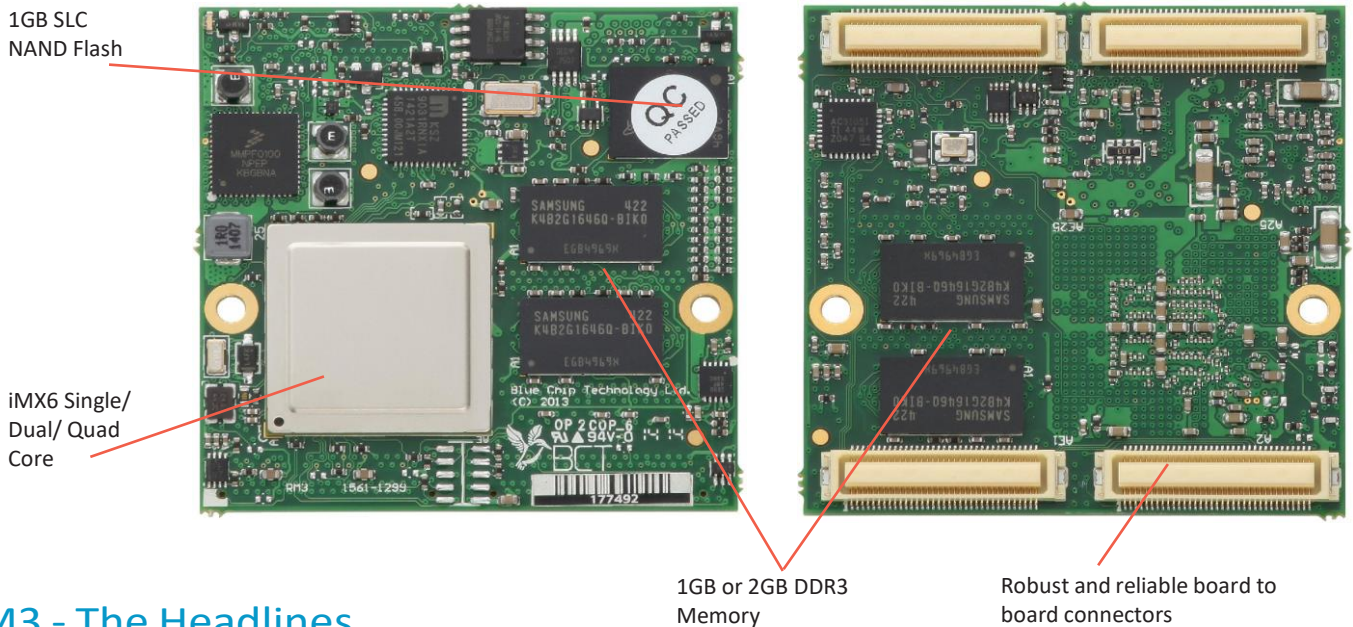


# RM3

iMX6 Cortex A9 System On Module  
PRODUCT INFORMATION



## RM3 - For the Engineers



## RM3 - The Headlines

- ▶ The smallest Cortex A9 ARM SOM - only 50 x 50mm
- ▶ Dual or Quad Cortex A9 CPU options
- ▶ 1GB DDR3 Memory standard, 2GB option
- ▶ 1GB NAND Flash
- ▶ SPI Flash contains the bootloader for security and reliability
- ▶ H.264 1080p60 decode, 1080p30 encode and 3-D video playback in HD
- ▶ Triple Graphics system with a Quad shader 3D unit capable of 200MT/s, separate 2D engine, separate OpenVG Vertex acceleration engine \*
- ▶ Freescale Smart Speed ensures low power consumption
- ▶ Extensive IO includes Gigabit LAN, CAN, dual independent displays, camera, PCI-E, I2S, UARTs, SPI, analogue audio, I2C, 16 bit asynchronous bus and many GPIO.
- ▶ Free working hostboard design package to reduce your time to market
- ▶ Ultra reliable, robust connectors instead of problematic gold edge connections
- ▶ Standard and Wide temperature ranges available
- ▶ Linux, Android and Windows Embedded Compact OS
- ▶ Designed, Manufactured and Technical Support in the UK

## RM3 - In a few words

The RM3 is the latest addition to Blue Chip Technology's highly successful System on Module (SOM) range of products in a tiny package, just 50 by 50mm. The RM3 processor is the latest Freescale iMX6 Cortex A9 with dual and quad core processor options. The graphics engines on the dual and quad core versions are class leading and able to drive two independent displays.

A SOM is an off-the-shelf building block with all of the functionality of a high performance single board computer- CPU, chipset, RAM, Flash, Ethernet, CAN, etc but without the usual constraints. Instead you choose the board size/profile, the inputs /outputs and the connectors that suits your product best and then fit one of our SOMs to provide the level of performance required. Basing your new product on our SOM means the most expensive, complex and highest risk elements of the design are already proven whilst your host board design is a simple task which can be completed quickly and effectively. We can either support you when you design your own hostboard or if you wish design it for you.



# RM3

## iMX6 Cortex A9 System On Module PRODUCT INFORMATION



### Processors & Memory

#### Processors - Freescale i.MX 6

CPU Technology	Cortex™ A9
CPU Cores	2 or 4
CPU Clock Speed	1GHz
Instruction Cache	32KB per Core
Data Cache	32KB per Core
Unified I/D L2 Cache	1MB shared by cores
Coprocessor	NEON Media Processor per Core

#### Memory

Technology	DDR3
Speed	1066 (533MHz)
Capacities	1GB & 2GB
Bus Width	
Dual Core	64 bit
Quad Core	64 bit

#### Storage

NAND SLC Flash	1GB (Operating System)
SPI Flash	4MB (U-boot)

### Graphics

- ▶ OpenGL ES 2.0 3D acceleration with 4 shaders (up to 200MT/s), OpenCL, 2D accelerator and OpenVG™ 1.1 hardware acceleration
- ▶ Full 1080p encode/decode supporting multiple high resolution video inputs/outputs simultaneously
- ▶ Hardware Accelerators
  - VPU - Video Processing Unit
  - IPUv3H - Image Processing Unit version 3H (2 IPU's)
  - GPU3Dv4 - 3D Graphics Processing Unit (OpenGL ES 2.0) version 4
  - GPU2Dv2 - 2D Graphics Processing Unit (BitBlit)
  - GPUVG - OpenVG 1.1 Graphics Processing Unit
- ▶ ASRC - Asynchronous Sample Rate Converter

### Operating System Support

- ▶ Linux Yocto Dora 1.5
- ▶ Android 4.3 (Jelly Bean)
- ▶ Windows Embedded Compact 2013 \*\*

\* Please contact Blue Chip Technology Sales for release dates

### Display/Audio

- ▶ Dual HD displays (DVI/HDMI & LCD) supported simultaneously and independently. Total raw pixel rate of all interfaces is up to 450Mpixels/sec, 24 bpp.
- ▶ One video camera/capture port
- ▶ I2S
- ▶ 1 x Stereo Channel microphone input
- ▶ 1 x Stereo Channel Audio output
- ▶ 1 x Stereo Audio input

### Peripheral Interfaces

- 1 x SPI Bus - 2 devices
- 2 x UARTs
- 1 x I2S
- 2 x SD/MMC
- 1 x HS USB
- 1 x HS USB ULPI Bus
- 2 x I2C Bus
- 1 x OneWire Bus
- GPIO
- 10/100/1000 Ethernet
- PCI-E
- Integrated SATA-II interface
- 1x 16 bit Asynchronous Bus (similar to X-Bus )
- Other interfaces are available - please see the RMx Design Guide for further information.

### Environmentals/Mechanicals

- ▶ Operating Temperatures
  - Standard 0°C to 70°C
  - Extended -40°C to 85°C
- ▶ Humidity 20% to 80% non-condensing
- ▶ EMC
  - Emissions EN55022 (A)
  - Immunity EN55024
  - Safety EN60950
- ▶ Dimensions 50 x 50mm

### Power

- | Input Voltage        | Power Consumption (mA) |       |
|----------------------|------------------------|-------|
|                      | Dual                   | Quad  |
| 3.3 Volts DC         | TBA                    | 850mA |
| 3.3 Volts DC Standby | <10mA                  | <10mA |
| 5.0 Volts DC         | <20mA                  | <20mA |

Note that these figures quoted are at the Linux Desktop