

Product Brief



M2-SM6-xx - i.MX 6 based SMARC Modules

Using the new SMARC standard for embedded modules, TES introduces a series of ultra-low power ARM COMs (Computer-On-Module) based on the Freescale™ i.MX6 Family which is powered by ARM Cortex A9 CPUs. TES leverages its vast experience of product development in the area of embedded multimedia systems for professional applications and systems combining audio/video, graphics and HMI.

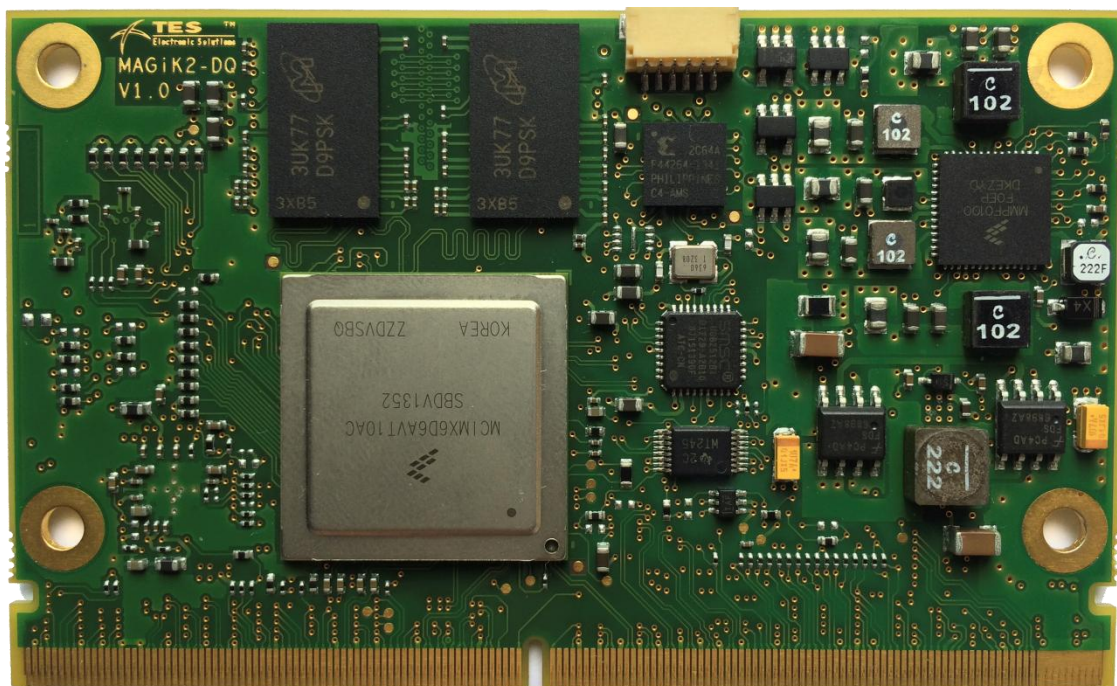
Target applications for MAGIK-2 ARM COMs are e.g. HMI units for machines and vehicles, Surround-View systems, Industrial Tablets, Surveillance Recording Systems, High End Home Appliances and Multimedia/ Infotainment applications in avionics or

transportation environment.

The module comes with a complete software suite with unique differentiators (details see below), including Device Drivers, BSP and support for various OS and selectable application specific HMI libraries.

TES delivers application specific carrier boards along with reference software for related system solutions in the area of 3D-surround-view, video surveillance and HMI units like tablets or similar.

Product development made easy, with the industry leading complete system solution packages from TES, a clear differentiator!



The M2-SM6-xx modules are available in different flavors with Dual Core and Quad Core CPUs with wide variety of IO feature sets.

Technical Information		
Module Name	M2-SM6-D2L	M2-SM6-2D/4Q
Processor	Freescale i.MX6 <ul style="list-style-type: none"> ARM Cortex A9 CPU Solo, Dual Lite Supports 800MHz, 1.0GHz NEON SIMD media accelerator 	Freescale i.MX6 <ul style="list-style-type: none"> ARM Cortex A9 CPU Dual, Quad Core Supports 800MHz, 1.0GHz, 1.2GHz NEON SIMD media accelerator
Graphics	<ul style="list-style-type: none"> Dual Display HD 1080p encode and decode 2D and 3D Graphics Accelerator 	<ul style="list-style-type: none"> Dual Display HD 1080p encode and decode 2D and 3D Graphics Accelerator
Memory	<ul style="list-style-type: none"> DDR3-1066 (x32 bits) upto 1GB (memory down) 	<ul style="list-style-type: none"> DDR3-1066 (x64 bits) upto 2GB(memory down)
Flash	<ul style="list-style-type: none"> 4GB to 64GB eMMC* 	<ul style="list-style-type: none"> 4GB to 64GB eMMC*
Display Interface	<ul style="list-style-type: none"> Parallel RGB 24 bits LVDS Single Channel 18/24 bits HDMI 1.4 	<ul style="list-style-type: none"> Parallel RGB 24bits LVDS Single Channel 18/24 bits HDMI 1.4
Camera	<ul style="list-style-type: none"> 1x Parallel Camera (8 Bits) 1x Serial Camera (2 lane) 	<ul style="list-style-type: none"> 1x Parallel Camera (8 Bits) 1x Serial Camera (2 lane)
Audio	<ul style="list-style-type: none"> 2x I2S 1x SPDIF 	<ul style="list-style-type: none"> 2x I2S 1x SPDIF
SD/MMC	<ul style="list-style-type: none"> 1x SDIO (4 bits) 1x MMC (8 bits) 	<ul style="list-style-type: none"> 1x SDIO (4 bits) 1x MMC (8 bits)
Ethernet	<ul style="list-style-type: none"> 1x Gigabit 	<ul style="list-style-type: none"> 1x Gigabit
USB	<ul style="list-style-type: none"> 1x USB 2.0 OTG 2x USB 2.0 Host 	<ul style="list-style-type: none"> 1x USB 2.0 OTG 2x USB 2.0 Host
High Speed Serial	<ul style="list-style-type: none"> 1x PCIe 2.0 	<ul style="list-style-type: none"> 1x PCIe 2.0 1x SATA II
Other Interfaces	<ul style="list-style-type: none"> 4x I2C 2x SPI 2x UART 1x UART with Flow Control 2x CAN 1x MLB 12x GPIO 	<ul style="list-style-type: none"> 4x I2C 2x SPI 2x UART 1x UART with Flow Control 2x CAN 1xMLB 12XGPIO
Operating Voltage Range	3.0V to 5.25V	
Temperature Range	Industrial and Commercial	
Form Factor	82mmx50mm	

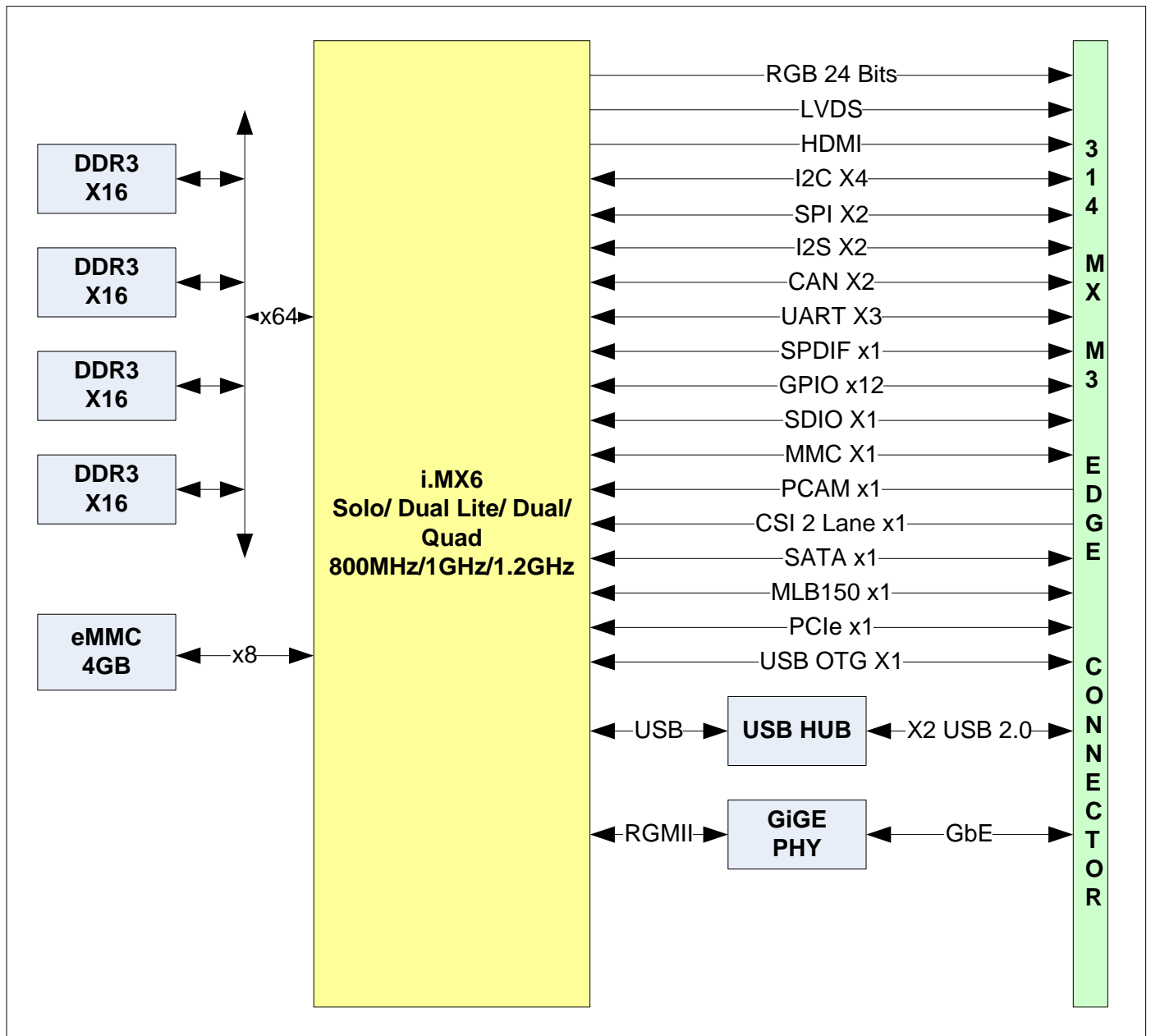
* Default supported flash capacity on the module is 4GB. Contact TES for different memory capacity configuration.

RoHS



RoHS Compliant

Module Architecture Diagram



Included Software Packages - TES Differentiators!

TES provides ready to use SDK for evaluation and application development. The section below lists high level details on the included software packages. For complete details please refer TES Linux and TES WEC SDK datasheets.

- ✓ **Board Support Packages (BSP) available for Linux / Ubuntu / WEC7 / WEC2013 / Android**
- ✓ **Operating System Options**
 - Linux (Kernel 3.0.35) -- [with optimized boot time](#)
 - Ubuntu 10.4 -- [with optimized boot time](#)
 - Android Jelly Bean 4.3
 - Windows Embedded Compact 7^ -- [with optimized boot time](#)
 - Windows Embedded Compact 2013^ -- [with optimized boot time](#)
 - RTOS^^

^ Contact TES for licensing options

^^Support available on specific request

- ✓ **TES Guiliani ready to use HMI framework and libraries**
- ✓ **HTML 5 support for Linux / Ubuntu**
- ✓ **Common Linux BSP for Solo/ Dual/ Quad Core Processor**
- ✓ **Common Windows BSP for Solo/ Dual / Quad Core Processor**
- ✓ **Common BSP for WEC7 and WEC13**
- ✓ **“Winimflash” software image flashing tool for Windows Embedded Compact 7 and -2013, appropriate for manufacturing environment**
- ✓ **Optimized PCIe Driver for WEC7 / WEC2013**
- ✓ **3D Surround view solution with i.MX6 Quad Core module**
- ✓ **4 - channel SD video streaming solution**

Ordering Information

Article	Part No**	Description
MAGIK-2 SMARC Module	M2-SM6-1S8M-0.5G-4G-IT-S	i.MX6 Solo, 800MHz, 512MB RAM, 4GBytes Flash, Industrial Temperature, 80mmx52mm
MAGIK-2 SMARC Module	M2-SM6-D2L8M-0.5G-4G-IT-S	i.MX6 Dual Lite, 800MHz, 512MB RAM, 4GBytes Flash, Industrial Temperature, 80mmx52mm
MAGIK-2 SMARC Module	M2-SM6-2D1G-1G-4G-IT-S	i.MX6 Dual, 1GHz, 1GB RAM, 4GBytes Flash, Industrial Temperature, 80mmx52mm
MAGIK-2 SMARC Module	M2-SM6-4Q1G-1G-4G-IT-S	i.MX6 Quad, 1GHz, 1GB RAM, 4GBytes Flash, Industrial Grade, 80mmx52mm

**Contact TES for other possible memory, CPU speed and temperature configurations

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