



M2-SM6-xx - i.MX6 based SMARC Modules

Using the new SMARC standard for embedded modules, Tessolve Embedded Systems introduces a series of ultra-low power ARM COMs (Computer-On-Module) based on the NXPTM i.MX Family which is powered by ARM Cortex A9 CPUs. Tessolve 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 MAGIK2 ARM COMs are e.g. HMI units for machines and vehicles, Surround-View Systems, Industrial Tablets, Medical Systems, High End Home Appliances and Multimedia/ Infotainment applications in avionics or transportation environment.

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

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

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



The M2-SM6-xx modules are available in different flavors with Single Core, Dual / Dual plus Core or Quad /Quad plus Core CPUs with wide variety of IO feature sets.

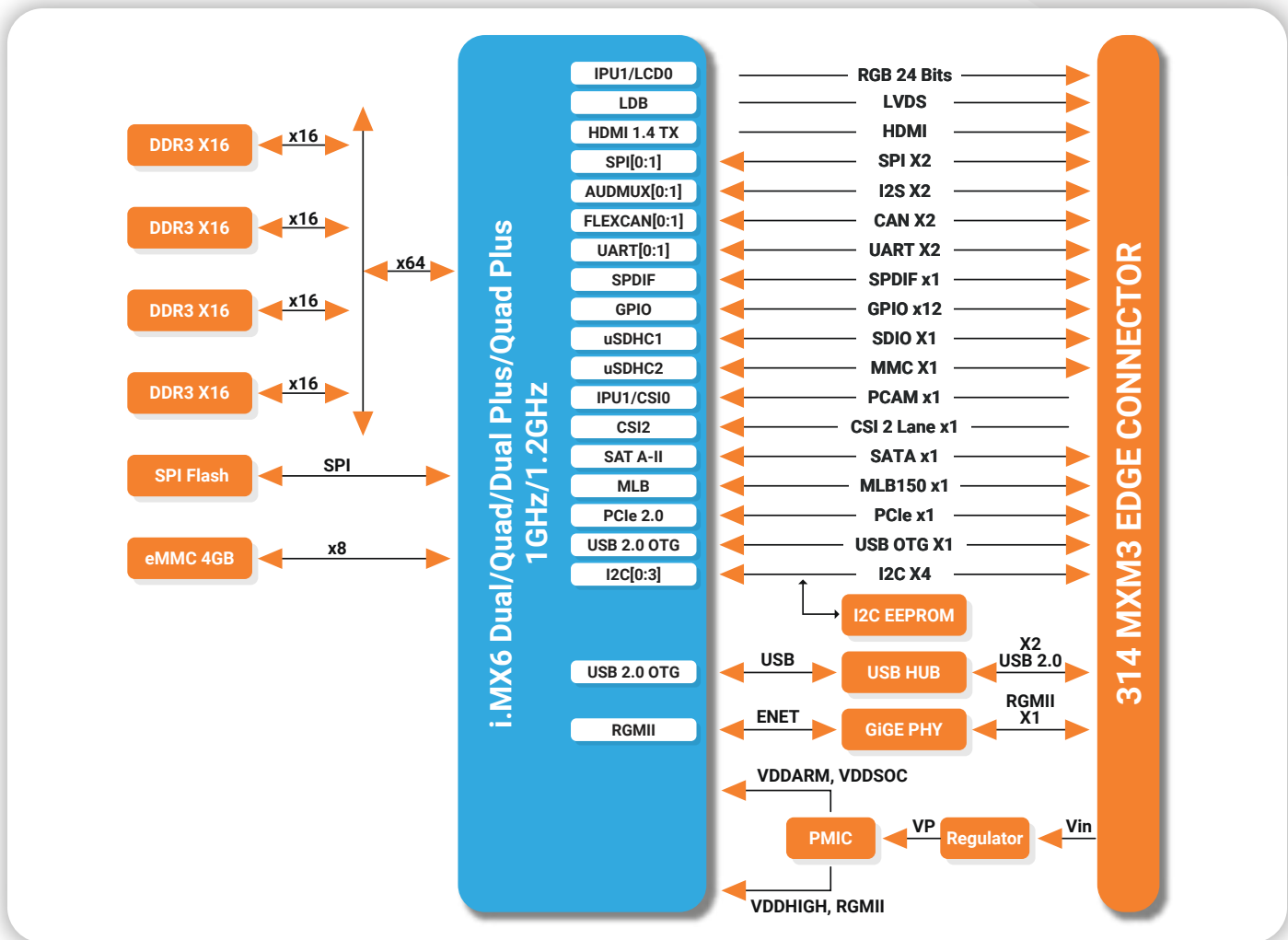
Module Name	M2-SM6-1S/D2L	M2-SM6-2D/4Q
Processor	NXP i.MX6 <ul style="list-style-type: none"> • ARM Cortex A9 CPU • Solo, Dual Lite • Supports 800MHz, 1.0GHz • NEON SIMD media accelerator 	NXP i.MX6 <ul style="list-style-type: none"> • ARM Cortex A9 CPU • Dual, Dual Plus / Quad, Quad Plus • Supports 800MHz, 1.0GHz, 1.2GHz • NEON SIMD media accelerator
Graphics	<ul style="list-style-type: none"> • HD 1080p encode and decode • 2D and 3D Graphics Accelerator 	<ul style="list-style-type: none"> • HD 1080p encode and decode • 2D and 3D Graphics Accelerator
Memory	<ul style="list-style-type: none"> • DDR3-1066 (x32 bits) • Up to 1GB (memory down) 	<ul style="list-style-type: none"> • DDR3-1066 (x64 bits) • Up to 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 (4 bits) 	<ul style="list-style-type: none"> • 1x SDIO (4 bits) • 1x MMC (4 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 • 1x USB 2.0 Host 	<ul style="list-style-type: none"> • 1x USB 2.0 OTG • 1x 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 • 1x UART • 1x UART with Flow Control • 2x CAN • 1x MLB • 12x GPIO 	<ul style="list-style-type: none"> • 4x I2C • 2x SPI • 1x UART • 1x UART with Flow Control • 2x CAN • 1x MLB • 12x GPIO
Operating Voltage Range	<ul style="list-style-type: none"> • 3.3V/ 5V 	
Temperature Range	<ul style="list-style-type: none"> • Industrial and Commercial 	
Form Factor	<ul style="list-style-type: none"> • 82 mm x 50 mm 	



RoHS Compliant

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

Module Architecture Diagram



Software Packages – Tessolve Differentiators!

Tessolve 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 Tessolve Linux and Tessolve WEC SDK datasheets.

✓ **Board Support Packages (BSP) available for Linux / WEC7 / WEC2013 / Android**

✓ **Operating System Options**

- **Linux** (Kernel 3.10/3.14/ 4.1)
- **Android** (Kit Kat / Lollipop/ Marshmallow)
- **Windows Embedded Compact 7[^]**
- **Windows Embedded Compact 2013[^]**
- **RTOS^{^^}**

with optimized boot time
with optimized boot time
with optimized boot time
with optimized boot time
with optimized boot time

[^] Contact Tessolve for licensing options

^{^^}Support available on specific request

✓ **Common Linux BSP** can be supported for all iMX6 series processors.

✓ **Common Windows BSP** can be supported for all iMX6 series processors.

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, 80 mm x 52 mm
MAGIK 2 SMARC Module	M2-SM6-D2L8M-0.5G-4G-IT-S	i.MX6 Dual Lite, 800MHz, 512MB RAM, 4GBytes Flash, Industrial Temperature, 80 mm x 52 mm
MAGIK 2 SMARC Module	M2-SM6-2D1G-1G-4G-IT-S	i.MX6 Dual, 1GHz, 1GB RAM, 4GBytes Flash, Industrial Temperature, 80 mm x 52 mm
MAGIK 2 SMARC Module	M2-SM6-4Q1G-1G-4G-IT-S	i.MX6 Quad, 1GHz, 1GB RAM, 4GBytes Flash, Industrial Grade, 80 mm x 52 mm
MAGIK 2 SMARC Module	M2-SM6-2DP1G-1G-4G-IT-S	i.MX6 Dual Plus, 1GHz, 1GB RAM, 4GBytes Flash, Industrial Temperature, 80 mm x 52 mm
MAGIK 2 SMARC Module	M2-SM6-4QP1G-1G-4G-IT-S	i.MX6 Quad Plus, 1GHz, 1GB RAM, 4GBytes Flash, Industrial Temperature, 80 mm x 52 mm

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

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