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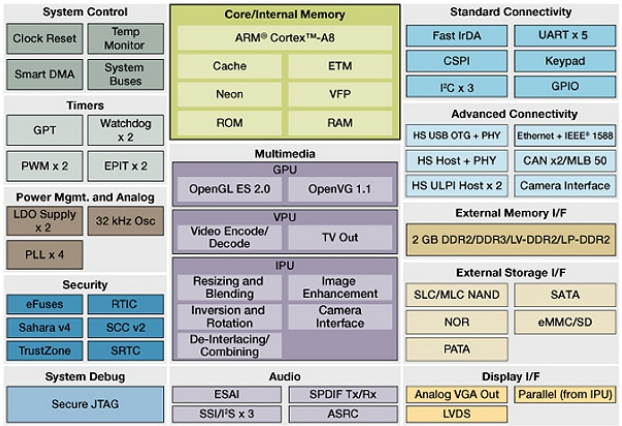
TRITON-TX53 | production-ready module with Freescale i.MX53

Actual Size

- pin-compatible
- guaranteed longevity
- EU manufacture
- Production-ready BSPs
- Responsive support



TRITON-TX53 is a self-contained production-qualitymodule, based on Freescale's low-power high performance multimedia-optimized i.MX535 or i.MX537 microcontrollers with ARM-Cortex-A8 core, NEON VFP, enhanced OpenGL ES 2.0 graphics core and hardware video codec. With BSPs for Windows Embedded Compact 7 and Linux, TRITON-TX53 is a complete solution, ready to be designed into an embedded system.

Why TRITON-TX?

TRITON-TX53 is a member of a series of pin-compatible, SODIMM format modules based on Freescale's i.MX series of microcontrollers. Each family member has an anticipated production lifetime of 10-15 years, and a guaranteed longevity of 7 years.

Because the TRITON-TX module family is pin-compatible, a baseboard may be developed that will work with different family members, from low-cost ARM9 modules, through to multicore ARM Cortex-A9 devices. TRITON-TX modules are manufactured in the EU, to the highest quality standards, and production-quality Board Support Packages are backed up by responsive, hands-on tech support.

For development the TRITON-TX53 is plugged into the StarterKit-5 development baseboard , and then in production the StarterKit is replaced by a project-specific baseboard, based on the supplied StarterKit design. Direct Insight can provide rapid development and manufacture of baseboards as a service.

Because the TRITON system includes a production quality Board Support Package (BSP) and production ready module, project times are cut dramatically.

TRITON-TX53 includes an 800MHz Freescale i.MX537, or 1200MHz Freescale i.MX535 processor, 512MB or 1GB of high performance, DDR3 RAM and 128MB NAND Flash.

The iMX53's integrated display controller permits direct connection of an LCD screen of up to 1920x1080 resolution. The TRITON-TX53 is optionally available with dual LVDS outputs. A directly connected 640x480 or 800x480 TFT with resistive or capacitive touch is optionally supplied as part of the development kit. The i.MX53 also provides an integral Ethernet 10/100 MAC, with the PHY implemented on the TRITON module.. The processor's I/O is accessible via a standard DIMM200 socket based on the standard TX-module pinout, which in turn is all available via connectors and headers on the StarterKit-5. The overall size of TRITON-TX53 is 67.6mm x 31mm x 4.2mm.

The module operates from either a single 3.1 - 5.5V supply, and may also be powered via USB, or a Li-Ion/Polymer cell.

StarterKit-5 Baseboard

For development purposes, the TRITON-TX53 plugs into the StarterKit-5 baseboard via its DIMM200 connector. This combination, with optional touch-screen display is supplied as a complete development kit running Linux, or Windows

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Embedded Compact 7. Linux source code and toolchain are supplied, along with a configured virtual machine for development. Windows CE source code is available for a modest fee.

The StarterKit-5 includes connectors for the I/O provided by the iMX53 processor and TRITON-TX53, including 2x SD/MMC card sockets, 2x RS232, USB-OTG and USB-Host connectors, a D-SUB15 VGA connector for an external video DAC and an Ethernet connector. In addition, there is an audio codec and touchscreen controller with 3.5mm headphone jack connector.

When using an LVDS/SATA version of TRITON-TX53, a special adapter is used in conjunction with the StarterKit-5 in order to bring the dual LVDS and single SATA ports to a suitable connector. The connectors used are the same as those on the Freescale QSB, and the Freescale MCIMX-LVDS1 1024 x 768 capacitive touch screen display is supported.

The board is powered via USB, an external supply source, or from a 3.0 to 4.2v Li-Ion /Polymer cell.

To facilitate creation of a production baseboard, full schematics are provided for the StarterKit-5. We offer a custom baseboard design and production service for customers with tight time-to-market constraints who wish to focus their efforts on application development.

TRITON-TX53 Feature:	Support	Details
Processor	i.MX53	*Freescale i.MX53 industrial spec.*
CPU	ARM Cortex-A8	
Processor clock max (MHz)	800/1000/1200	*800MHz i.MX537, 1/1.2GHz i.MX535*
RAM(MB)	512/1024	*DDR3-800*
NAND Flash (MB)	128	
Coprocessor	Graphics, Video	*OpenGL ES 2.0, hard codec 1080p*
Floating Point	y	*NEON Vector Floating Point*
UART (RS-232)	3(2**)	*up to 5 UARTs via pin-sharing*
Ethernet 10/100 BaseT	1	*PHY on module. IEEE1588 on i.MX537*
I2C Interface	2	
LCD controller	1920x1080	*24-bit parallel, dual LVDS**
Supplied touch screen	800x480**	*other sizes, cap. touch, on request*
LVDS	2*	*optional LVDS/SATA build*
SATA	1*	*optional LVDS/SATA build*
SSP (I2S, AC'97)	2	
CAN	2	*i.MX537 only*
SD card / SDIO (4-bit)	2	
1-wire interface	1	
USB 2.0 Host	1	
USB 2.0 OTG	1	
SPI	2	
PWM controller	1	
Keypad	8x8	
JTAG	1	
Analog audio	1**	*controller on baseboard*
Touch screen interface	1**	*4-wire on baseboard, capacitive via I2C*
RTC	1	*DS1339 on module*
PAL / NTSC out	1	
Temp Range	-20/70C -45/80C	*i.MX537 industrial spec.*
Dimensions	31mm x 68mm	*SODIMM200*

**optional* ***on baseboard*

freescale Alliance Member

ARM CONNECTED

Windows Embedded Gold Partner

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