

## TRITON-270 miniature modular computer based on Marvell PXA270

TRITON-270 is a self-contained production-quality module, based on Marvell's powerful, ultra-low-power PXA270 microcontroller. TRITON-270 is a complete solution, tried and tested, with full software support, and ready to be designed into an embedded system.

For development you simply plug the TRITON-270 into its StarterKit development baseboard, and then in production the StarterKit is replaced by your own custom breakout base, which may be designed and manufactured by us on your behalf.

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

The system is supplied running either Linux 2.6, Windows CE 5.0, or Windows Embedded CE 6.0.

TRITON-270 includes a 520MHz or 312MHz Intel PXA270 processor, up to 128MB ultra-low power 1.8v 32-bit mobile



**TRITON Starter Kit baseboard with optional MI Board and QVGA touch screen display mounted**

SDRAM and up to 64MB ultra-low power 1.8v P30 Flash.

The PXA270's integrated LCD controller permits direct connection of an LCD screen, and the PCMCIA interface permits simple integration and extension into a target system. Glueless connection to an SMSC LAN91C111 Ethernet controller is implemented in the StarterKit.

TRITON-270 also features a 3.3V, 32-bit buffered external memory interface (which may be powered off), a high-efficiency programmable PMIC power supply which is integrated with the PXA270's Wireless SpeedStep power management, and the availability of all the processor's I/O via a standard DIMM200 socket. The overall size of TRITON-270 is 67.6mm x 31mm x 4.2mm.

The module operates from a single 3.3V supply, and ships with Redboot firmware installed, and full Linux 2.6, Windows CE 5.0 or CE 6.0 BSP with the StarterKit-3 baseboard.

### Why PXA270?

The Intel PXA270 combines ultra-low-power operation with outstanding multimedia performance.

PXA270 provides an extended instruction set which includes Wireless MMX instructions for enhanced image processing and



graphics capability.

PXA270 is capable of being dynamically configured to run at reduced supply voltage and reduced clock rate, and the TRITON-270 and associated BSPs support this facility. With processing power to spare, PXA270 is the ideal target for use with Windows Embedded CE and embedded Linux.

### StarterKit-3 Baseboard

For development purposes, the TRITON-270 plugs into the StarterKit-3 baseboard via its DIMM200 connector. This combination, with optional touch-screen display is supplied as a complete development kit running Linux or Windows CE 5.0 or CE 6.0. As well as the Linux BSP, a complete GCC toolchain is shipped, allowing users to modify the BSP as required. Windows CE source code is available for a fee.

The StarterKit-3 includes connectors for the I/O facilities offered by the PXA270 processor and TRITON-270, including a CompactFlash type II socket, SD/MMC card socket, 3 x RS232 connectors, USB-device and USB-Host connectors, and a D-SUB15 VGA connector for the video DAC. In addition, there is a LAN91C111 10/100 BaseT Ethernet, a UCB1400 audio codec and touchscreen controller with two 3.5mm audio connectors.

The on-board power supply has an 8 - 24V input range and both 3.3v and 5v are available on-board.

To facilitate creation of a production baseboard, full schematics are provided for the StarterKit-3. 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.

There is also a JTAG interface, which can be used for the connection of a debug probe, such as the EPI Majic emulator which works with both Platform Builder and GDB.

### Multimedia Interface Board

The optional Multimedia Interface (MI) Board plugs directly onto the StarterKit-3 headers and optionally provides a directly connected QVGA transreflective TFT touch screen display.

The MI Board also provides a connector for the TRITON-CAM camera module.

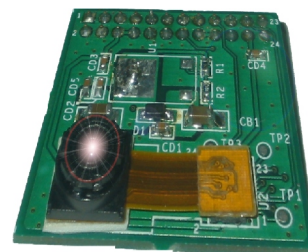
### TRITON-CAM

The optional TRITON-CAM module provides a 1.3MPixel camera,

and associated software to facilitate still and moving image capture. Because TRITON-CAM is connected directly to the PXA270's Quick Capture interface, optimum imaging performance is achieved.

TRITON-CAM ships with drivers for Windows CE 5.0 and CE 6.0 as well as a Linux, and includes a sample viewfinder application with source code.

Driver source code and support for customisation are available. Higher resolution and autofocus sensors are also available on request.



## TRITON-270 Feature and Option Summary

The table shows how the various features of the development system are available - in other words, whether they are standard features of the PXA270 device, the TRITON-270 module or the StarterKit-3. Where more than one value is listed, the underlined value represents the standard configuration. Optional features are usually only available for orders of 100 or more modules, however non-standard configurations are sometimes available in smaller quantities - please ask for details.

The complete list of connectors on StarterKit-3 is:

- DIMM200 TRITON socket
- 200-pin flat cable header
- CompactFlash Type II socket
- SD/MMC card socket
- 3xRS232 on headers
- USB device
- USB host
- Video Output to D-SUB 15
- 3.5mm stereo line-in/out
- JTAG
- daughter board slot
- 10 Mbit Ethernet
- 100 Mbit Ethernet

TRITON Starter-Kit systems, whether running Linux or Windows CE are sold and supported worldwide by PXA270 specialist Direct Insight, who also offer a broad range of complementary solutions including compilers, debuggers, JTAG interfaces, graphics software, driver development tools, device programming solutions, JTAG test systems, in-circuit emulators (including for PXA270) and more.

We also offer a custom baseboard design and manufacture service.

Visit our regularly updated website at [www.directinsight.co.uk](http://www.directinsight.co.uk) or call +44 1295

<i>TRITON-270 Feature:</i>	processor	module	baseboard
UART / RS232	3		
I2C Interface	1		
LCD controller	1		
AC'97	1		
I2S	1		
SSP (synchronous serial port)	1		
IrDA (InfraRed)	1		
Bluetooth UART	1		
SD card / SDIO (4-bit)	1		
MMC / CompactFlash (incl. IDE mode)	1		
USB Host	1		
USB Device	1		
SPI	1		
PWM controller	4		
JTAG	1		
UCB1400 Audio Codec			✓
Touch screen interface			✓
Connectors (see list)			✓
Video DAC / VGA out			✓
Power Management IC		✓	
Buffered 32bit ext. memory i/f		✓	
Ethernet 10/100 BaseT			✓
Mobile SDRAM(MB)		16/32/64/128	
Processor clock max (MHz)	312/520		
Wireless Flash (MB)		8/16/32/64	
Real Time Clock		✓	
PDF schematics			✓
* other PXA270 interfaces such as QCI, USIM etc. via headers			



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