

## TRITON-TX27 miniature modular computer based on Freescale i.MX27

TRITON-TX27 is a self-contained production-quality module, based on Freescale's low-power i.MX27 microcontroller running Windows CE and Linux. TRITON-TX27 is a complete solution, with full software support, and ready to be designed into an embedded system.

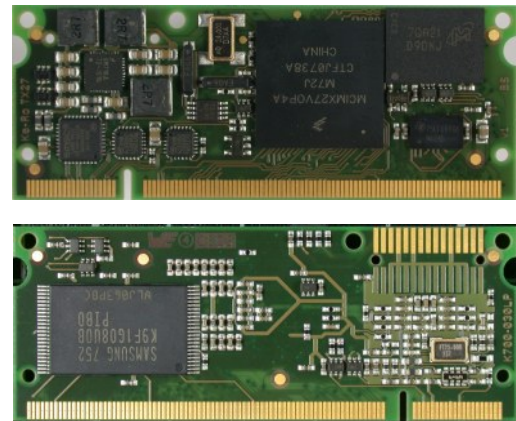
For development you simply plug the TRITON-TX27 into its StarterKit development baseboard, and then in production the StarterKit is replaced by your own custom breakout base, which may be designed and manufactured by us on your behalf.

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, or Windows Embedded CE 6.0.

StarterKit-5. The overall size of TRITON-TX27 is 67.6mm x 26mm x 4.2mm.

The module operates from a single 3.3V supply, and may be powered via USB, or a Li-Ion/Polymer cell. The TX27 ships with bootloader firmware installed, and full Linux 2.6, Windows



**TRITON-TX27 iMX27 Module Shown Actual Size**

Embedded CE 6.0 BSP with the StarterKit-5 baseboard.

### Why iMX27?

The Freescale iMX27 features low power operation with a broad set of interfaces including Ethernet, USB 2.0 Host and OTG, as well as an on-chip LCD controller. Based on an ARM926-EJ-S core with 400MHz clock, and featuring an internal MPEG-4 / H264 codec, the iMX27 is versatile yet cost-effective.

### StarterKit-5 Baseboard

For development purposes, the TRITON-TX27 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 CE 6.0. With 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-5 includes connectors for all the I/O provided by the iMX27 processor and TRITON-TX27, including a 2x SD/MMC card sockets, 3 x RS232 connectors, USB-OTG and USB-Host connectors, a D-SUB15 VGA connector for the video DAC and Ethernet connector/PHY. In addition, there is a UCB1400 audio codec and touchscreen controller with two 3.5mm audio connectors.

The board is powered via USB, and 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



**TRITON Starter Kit baseboard and touch-screen**

TRITON-TX27 includes a 400MHz Freescale iMX27 processor, 64MB ultra-low power 1.8v 32-bit mobile DDR-SDRAM and 128MB NAND Flash.

The iMX27's integrated display controller permits direct connection of an LCD screen of up to 800 x 600 resolution. The i.MX27 also provides an integral Ethernet 10/100 MAC. The processor's I/O is accessible via a standard DIMM200 socket, which in turn is all available via connectors and headers on the

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.

## StarterKit-5 TFT LCD Touch-Screen

The optional Xenarc 700TSV features a 7" TFT LCD monitor and touch-screen, with physical resolution of 800 x 480. The screen interfaces to TRITON-TX27 via a video output, and the touch facility via a USB port on the StarterKit-5.

## TRITON-TX27 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 iMX27 device, the TRITON-TX27 module or the StarterKit-5. 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-5 is:

- DIMM200 TRITON socket
- 4x50pin cable headers
- 2x SD/MMC card socket
- RS232 on 10pin header
- RS232 on D-SUB connector
- USB OTG
- USB host
- Video Output to D-SUB 15
- 3.5mm headphone
- JTAG
- daughter board slot
- 10/100 Mbit Ethernet
- Power (or via USB Host)

TRITON Starter-Kit systems, whether running Linux or Windows CE are sold and supported worldwide by 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, emulators 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 768800 for further information.

| <i>TRITON-TX27 Feature:</i>              | processor | module    | baseboard |
|------------------------------------------|-----------|-----------|-----------|
| UART / RS232                             | 5         |           |           |
| I2C Interface                            | 2         |           |           |
| LCD controller                           | 1         |           |           |
| SSP (synchronous serial incl. AC97, I2S) | 2         |           |           |
| IrDA (InfraRed)                          | 1         |           |           |
| Bluetooth UART                           | 1         |           |           |
| SD card / SDIO (4-bit)                   | 2         |           |           |
| 1-wire interface                         | 1         |           |           |
| USB Host                                 | 1         |           |           |
| USB OTG                                  | 1         |           |           |
| CSPI                                     | 2         |           |           |
| PWM controller                           | 1         |           |           |
| JTAG                                     | 1         |           |           |
| UCB1400 Audio Codec                      |           |           | ✓         |
| Touch screen interface                   |           |           | ✓         |
| Connectors (see list)                    |           |           | ✓         |
| Video DAC / VGA out                      |           |           | ✓         |
| Ethernet 10/100 BaseT                    | 1         |           |           |
| Mobile SDRAM(MB), 32-bit, 266MHz DDR     |           | 64/128    |           |
| Processor clock max (MHz)                | 400       |           |           |
| NAND Flash (MB)                          |           | 128       |           |
| PDF schematics                           |           |           | ✓         |
| Temperature Range                        |           | -20C/+85C |           |
| Dimensions                               |           | 68 x 26mm |           |



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