



Titanium Ti375 C529 Development Kit

The Titanium Ti375 FPGA has a quad-core hardened RISC-V block with a 32-bit CPU featuring the ISA RISC-V32I with M, A, C, F and D extensions, and six pipeline stages. Additionally, the Ti375 FPGA supports soft-core MIPI D-PHY up to 1.5 Gbps per lane and has hardened LPDDR4/4x controller.

With the Ti375 C529 development board, users can perform multi-core design with the RISC-V SoC. This board is preloaded with an example design that demonstrates multi-core designs: a spinning donut program uses CPU0 while a running light program uses CPU1.

One key feature of this board is the on-board USB-to-dual JTAG device that supports simultaneous debugging of the Ti375 FPGA and the RISC-V SoC. Additionally, the board has an array of on-board interfaces such as an FMC (LPC) interface and PMOD interface to expand the board's functionality. The board is compatible with [Efinix daughter cards](#) included with other kits or as standalone cards.



The Ti375 C529 development board, included in the kit, has these components:

- Efinix Ti375C529C4⁽¹⁾ FPGA in a 529-ball FineLine BGA package
- 8 Gbit (256 Mbit x 16 x 2 channels) LPDDR4 or LPDDR4x SDRAM:
 - Supports x32 data width
 - Read/write speed up to 3.3 Gbps
- 2 512 Mbit SPI NOR flash memories:
 - Supports single, dual and quad mode for each SPI flash
 - Supports x8 with both SPI flash devices in quad mode
- 8 GByte eMMC
- 2 high-speed QSE connectors that support up to 4 channels (4 data lanes + 1 clock lane, 1.5 Gbps per lane) TX/RX soft-core MIPI interfaces or LVDS, and GPIO. Compatible with the daughter cards from other Efinix development kits.
- 3 PMOD interfaces with extended functionality
- Gigabit Ethernet interface supporting RGMII standard and complies with 10Base-T, 100Base-TX, and 1000Base-T IEEE 802.3 standards
- Micro-SD card slot
- FPGA mezzanine card (FMC) with low pin-count (LPC) connector
- USB type-C connector to configure the development board
- SMA interface
- Supports RTC function for time measurement and calendar
- 25, 50, 74.25, and 100 MHz oscillators for Ti375 clock input
- 5 User LEDs and 2 pushbutton switches
- Power:
 - 12.0 V power supply connector
 - On-board regulator sources: 0.6 V, 0.85 V, 0.95 V, 1.0 V, 1.1 V, 1.2 V, 1.8 V, 2.5 V, 3.3 V, 5.0 V
- Power good and Ti375 configuration done LEDs

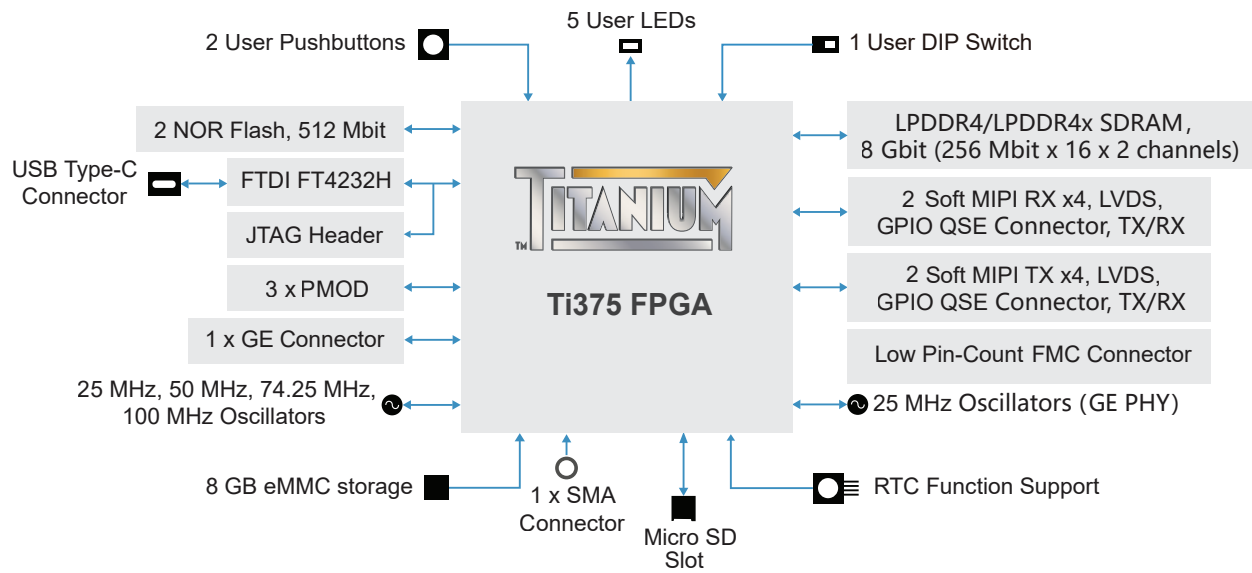
What's In the Box?

- Titanium Ti375 C529 development board preloaded with a demonstration design
- USB type-C cable
- 12-V, 5-A universal power adapter with 5.5-mm DC jack converter
- 4 standoffs, 8 screws, 8 washers, and 8 nuts
- 12-V cooling fan
- Heat sink



(1) The FPGA speed grade may vary and is subject to availability.

Figure 1 Titanium Ti375 C529 Development Kit Block Diagram



Compatible daughter cards

The following are daughter cards that are compatible with the Titanium Ti375 C529 Development Board:

- HDMI Connector Daughter Card
- MIPI and LVDS Expansion Daughter Card
- Dual MIPI to DSI Converter Daughter Card
- Raspberry Pi Camera Connector Daughter Card
- Dual Raspberry Pi Camera Connector Daughter Card
- Coral Camera Connector Daughter Card

Availability

The Titanium Ti375 C529 Development Kit is available for ordering. Visit www.efinixinc.com for a listing of distributors and sales representatives to order your kit today.