

Tanto2 – FPGA

Rapid FPGA Prototyping Platform - Hardware Programmed in Software

Products have to be designed for flexibility to cover different requirements with preferably one hardware base concept.

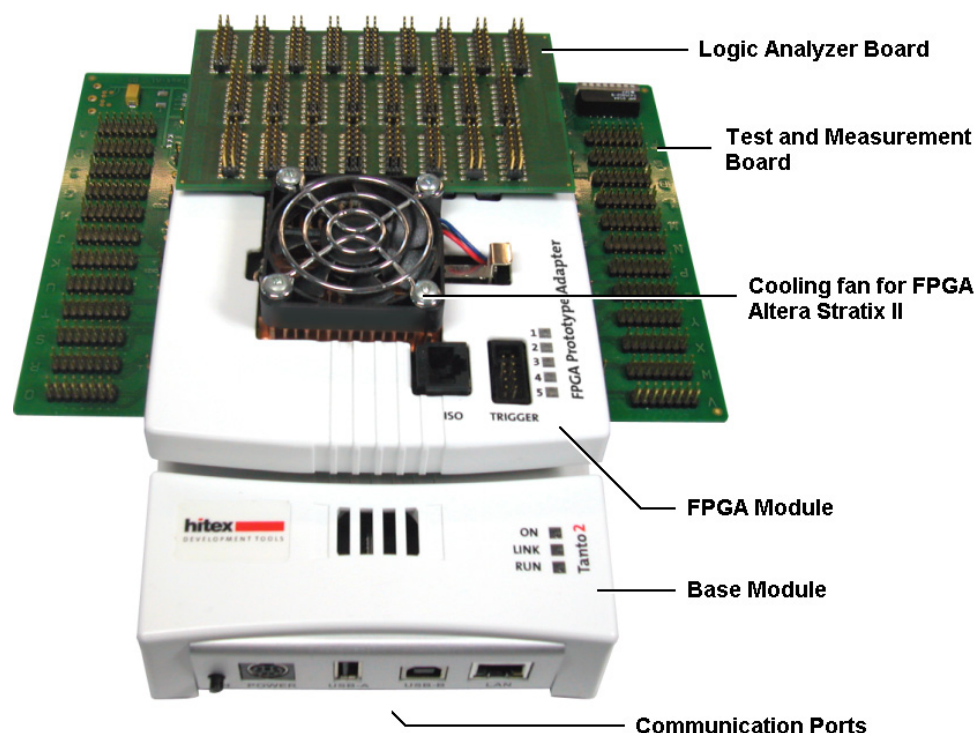
FPGAs which are designed in such a base concept provide the required flexibility. Hitex has focused on the design-in of Altera FPGAs and is very much experienced in the design flow (simulation, synthesis and place&route) using professional tools as Mentor Graphics LeonardoSpectrum and ModelSim, Altera Quartus II. Of course, FPGAs from other vendors can also be integrated.

Simulation of an FPGA design is one part of the business - to have the real FPGA design running in a hardware environment without development of an own prototyping board is the other.

With Tanto2 Hitex has designed a generic platform with a large FPGA extension board which can be used for Rapid FPGA prototyping. Of course, Tanto2 could also be applied in fields of testing, signal- and bus analysis, debugging, programming and FPGA prototyping.

The Tanto2 system consists of the following components:

- Base Module Tanto2-Base,
- FPGA Development Board FPGA Module
- Tanto2 Test and Measurement Board (optional)
- Logic Analyzer Board (optional)



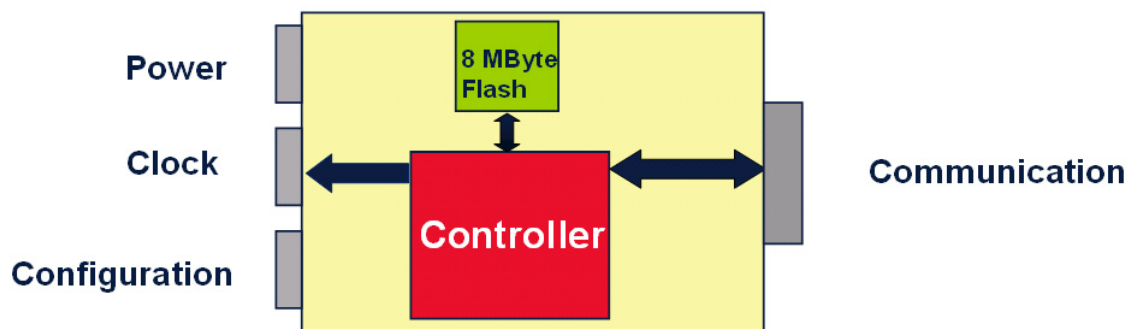
Tanto2-FPGA Complete system for Rapid FPGA prototyping

Tanto2 Base Module

Tanto2-Base is the core module with all necessary hardware resources to provide flexibility and performance for your requirements:

- **Communication**
 - USB 2.0 HighSpeed (Host and Device)
 - Ethernet
 - RS232
- **Control-CPU**
 - 32-Bit High-Performance Microcontroller
- **Memory**
 - 8 MByte Flash
- **Power**
 - 5V, 3.3V, 2.5V
- **Clock**
 - 48 MHz
- **Configuration**
 - Interface to configure the Tanto2 FPGA Module

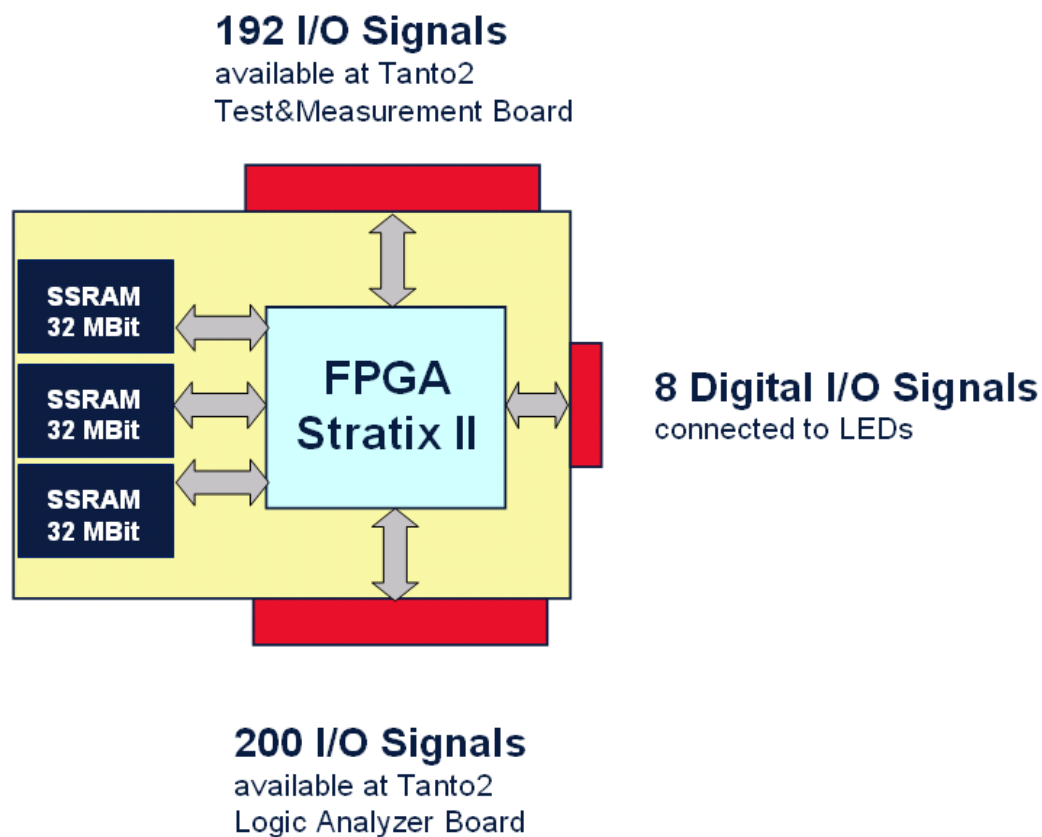
Tanto2-Base Components and Interfaces

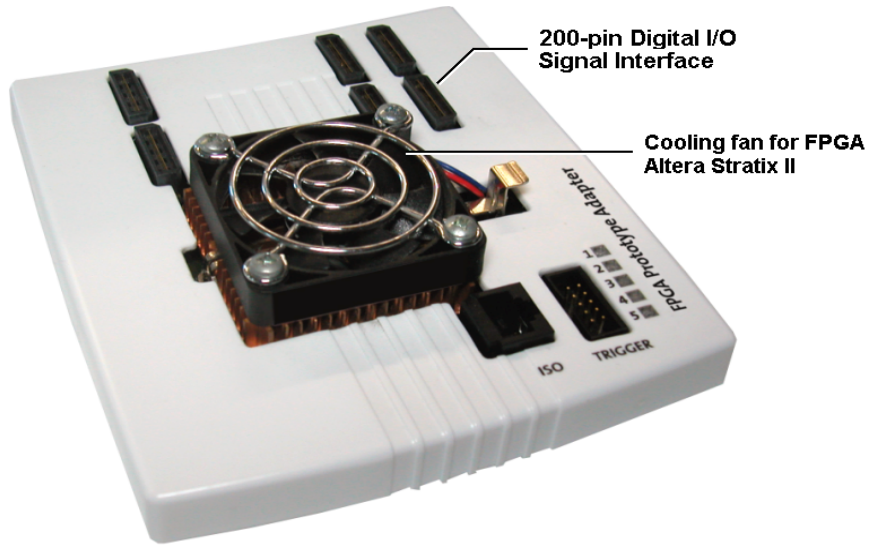


Tanto2 FPGA Module

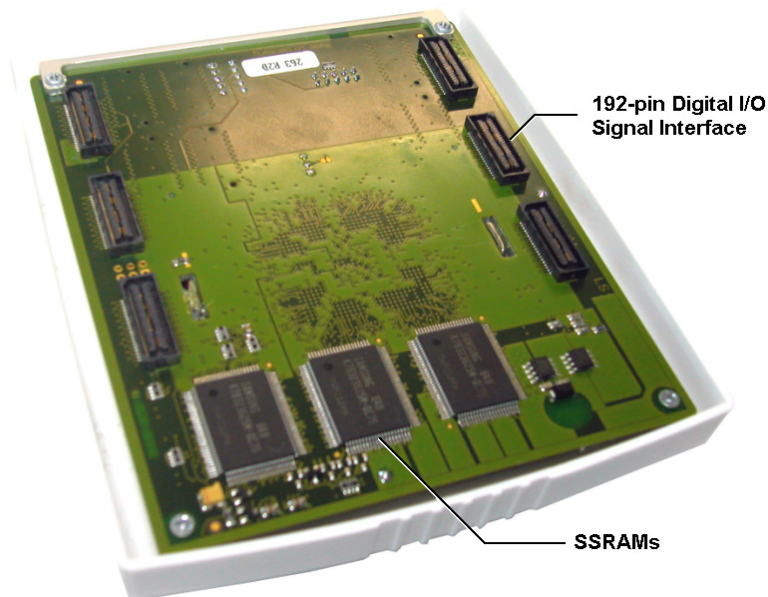
The Tanto2 FPGA module is an extension module and is connected to the Tanto2 Base Module. It offers the following resources:

- **FPGA**
Altera Stratix II EP2S180F for user hardware applications
- **Application Signal Interface**
2 sets of digital I/O pins, each providing 192 and 200 signals.
- **Supply Voltages**
4 voltages are available on the 200-pin interface of the FPGA Module:
+5V, +3.3V, +2.5V and 1.2V
- **Memory**
3 SSRAM modules, each providing 32 MBit of storage configurable as
1 M x 32 or 2 M x 16
- **LEDs**
A set of 8 LEDs used as application-specific display





Tanto2 FPGA Module (Top Side)



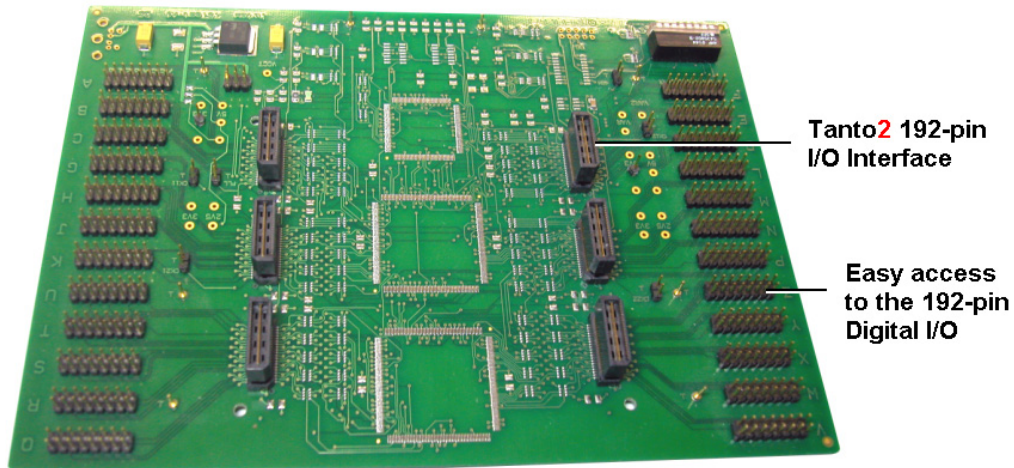
Tanto2 FPGA Module (Bottom Side)



Tanto2 Base Module with connected FPGA Module

Tanto2 Test and Measurement Board (optional)

Tanto2-Test and Measurement Board can be plugged between Tanto2 Base Module and Tanto2 FPGA Module and provides easy access to the first set of 192 digital I/O signals of the Tanto2 FPGA Module.



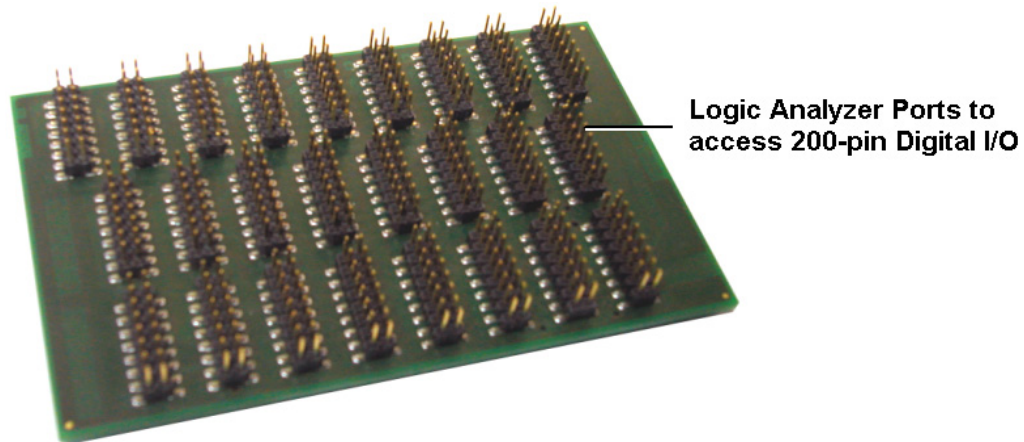
Tanto2 Test and Measurement Board



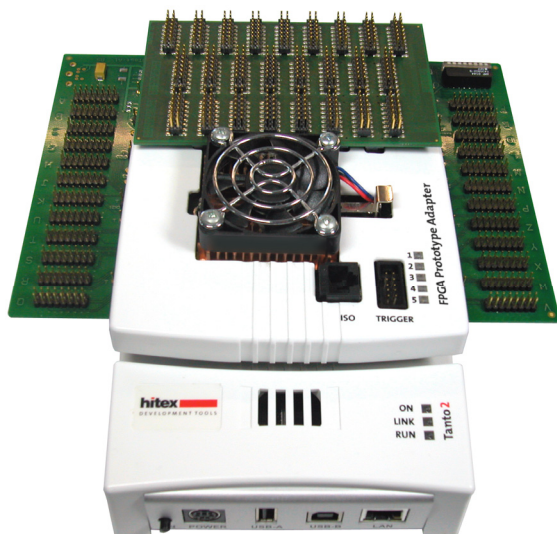
Tanto2 Base with connected Test and Measurement Board

Tanto2 Logic Analyzer Board (optional)

The Tanto2 Logic Analyzer Board can be plugged onto the Tanto2 FPGA Module and provides easy access for a Logic Analyzer to the second set of 200 digital I/O signals of the Tanto2 FPGA Module.



Tanto2 Logic Analyzer Board



Tanto2-FPGA Complete System with connected Logic Analyzer Board

Software for Tanto2-FPGA

The Tanto2 Rapid FPGA Prototyping System comes with an easy to use command line software that provides downloading of FPGA images via USB or Ethernet.

FPGA Design Service

Hitex offers to implement FPGA designs based on pure source code (Verilog, VHDL) using predefined modules like standard LPMs or even complex IP modules like DDR SDRAM controller.

In close cooperation with our customer, Hitex creates the specification as follows:

- Definition of the required functionality
- Definition of use- and test cases
- Consulting regarding FPGA type and vendor
- With our own designs, we mainly use Altera FPGAs, but on demand we also offer support and designs from other vendors.

Hitex Product Order Codes

Tanto2-FPGA	Rapid FPGA Prototyping System with Tanto2 Base Module and Tanto2 FPGA Module
Tanto2-T&M	Tanto2 Test and Measurement Board (optional)
Tanto2-LA	Tanto2 Logic Analyzer Board (optional)
DS-FPGA	FPGA Design Service