

# Tanto2 multiTEST

Universal Hardware Tester  
Add-on to Tessy

*Embedding Software Quality*



# All-Purpose Test Tool For Hardware

Tanto2 multiTEST is a universal system for the generation and the sampling of signals. They are considered to be input (stimulus) or output (behavior) of a system under test (SUT).

## Base unit, adapter, and software

Tanto2 multiTEST consists of a base unit, adapter and a software interface. The base unit contains a 32 bit microcontroller from Infineon and up to 1 GB RAM to store both sampled signals and predefined stimuli signals. An FPGA is used for the configuration of the signals, for the generation of the stimuli signals, and for the sampling and evaluation of signals. Up to 192 signals at frequencies up to 200 MHz can be input as well as output. The base unit is connected to a PC either by USB 2.0 or by Ethernet.

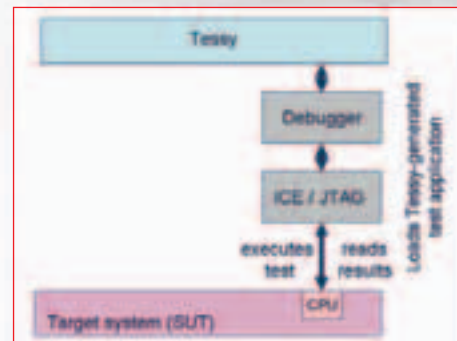


*Hardware scheme Tanto2 multiTEST*

An application specific adapter is plugged onto the base unit, thus defining number and type of signals (digital/ analog, voltage levels, etc.). Because base units can be cascaded, the number of signals is virtually unlimited. The software provides an interface in form of an API allowing control of the Tanto2 multiTEST. The functions comprise communication with Tanto2 multiTEST, configuration of Tanto2 multiTEST, and reading / writing of signal values. The configuration is specified via a XML file.

## Extending Tessy by Tanto2 multiTEST

Tessy is a tool to automate the unit testing (or module testing) of embedded software. Tessy creates a special test application including the unit under test. This application is loaded via a debugger into the target system. Tessy executes the tests on the target system. For this, Tessy communicates with a debugger. The debugger in turn, communicates via an in-circuit emulator or a JTAG connection with the CPU of a microcontroller in the target system.

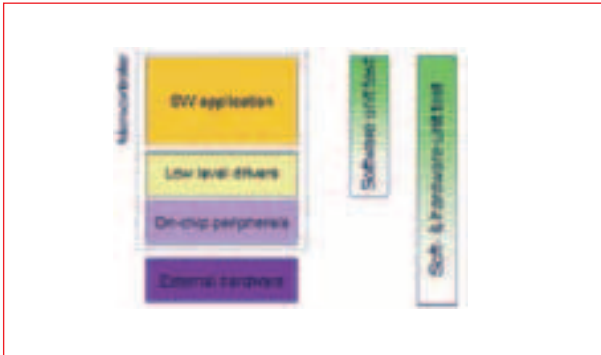


*Unit testing without Tanto2 multiTEST*

In the above configuration, signals on the target system cannot be included in the unit test, neither as input (stimulus) nor as output (behavior).



# Tanto2 multiTEST Extends The Usefulness Of Unit Testing



*Tanto2 multiTEST enables soft- and hardware unit testing*



*Tanto2 multiTEST with adapter for digital I/O*

The inclusion of hardware in unit testing provides several advantages:

- > The test verdict is more valuable
- > Compared to manual test execution
  - > Time is saved
  - > Human errors are avoided
  - > Regression testing becomes practical
- > Compared to a proprietary solution
  - > Reusability and universality
  - > Faster application (neither development nor test of the test environment is necessary)
- > A hardware component can become the focus of the test, possibly by using test software especially written for this purpose

	direction	type	voltage	remarks
9x 8 signals	from or to target	push-pull	3.3V or 5V	
5x 8 signals	from or to target	push-pull	0V to 5.115V	adjustable in 5mV steps
2x 8 signals	from target		0V to 12.276V	adjustable in 12mV steps
2x 8 signals	to target	open-drain	30V, 20mA	
1x 8 signals				

*The adapter for digital I/O features 152 signals*

**For current information please see:**  
[www.hitex.com/perm/tanto2-multitest.html](http://www.hitex.com/perm/tanto2-multitest.html)



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