



JTAG emulator

# F-SightXstick MicroBlaze

specifically for Xilinx-made FPGA soft-core processor "MicroBlaze"



F-SightXstick (Hereafter described as "STICK") is an emulator dedicated to soft-core CPU "MicroBlaze micro processor" implemented in Xilinx-made FPGA Virtex and Spartan-3 families. STICK has both functionalities of JTAG emulator with MicroBlaze software debugging capability and of the analyzer with FPGA hardware debugging capability. Not to mention, it allows FPGA configuration. For connection to the host PC, it supports USB2.0 and requires no power supply with VBus support. For connection to the target system, all you need to do is to connect it with 8-pin flying-wire style cable. It will realize simple debugging environment with much easier connection. As for the debugger software, it incorporates CSIDE, a user-friendly debugging software. It supports high-level language debugging of C languages.

- Supports soft-core processor "MicroBlaze"
- 3-in-1 emulator: MicroBlaze debugging/FPGA debugging/FPGA configuration

- CPU program execution control (Go/Break)
- Supports debugging on flash memory
- Probing feature that allows easy routing of analyzer monitoring signals to pins
- CPU break feature
- Requires no power supply with VBus support
- Supports USB2.0/1.1 (Full-speed)
- Logic analyzer feature
- Supports JTAG chained devices

## Main specifications

<b>Supported devices *1</b>		Xilinx-made Virtex-II / Virtex-II Pro / Virtex-4 / Virtex-5 Spartan-3 / Spartan-3E / Spartan-3A / Spartan-3AN / Spartan-3A DSP	
<b>Target I/F</b>	Pins to be used	JTAG I/F specifically for FPGA (Essential), Analyzer measuring pin (Optional)	
	Maximum number of devices to be in chain	8 units	
	JTAG voltage	2.5V or 3.3V	
	JTAG clock	1MHz, 5MHz, 10MHz or 20MHz to choose from	
	Current consumption	50uA or lower	
	Voltage measurement	Measures by sampling and shows the results. Reading will be 50mV accurate with precision showing 1 decimal place.	
	Connector	Connector with 8 strings of flying wires (Cable length: Approx. 15cm)	
<b>FPGA functionality *2</b>	Supported tools *3	Xilinx-made ISE 9.1i/EDK 9.1i ISE 9.2i/EDK 9.2i ISE 10.1i/EDK 10.1i ISE 11.1i/EDK 11.1i ISE 11.2i/EDK 11.2i ISE 11.3i/EDK 11.3i ISE 11.4i/EDK 11.4i	
	Supported languages	VHDL, Verilog	
	Probing feature	Automatically routes FPGA internal nodes to FPGA pins in wiring.	
	Linkage feature	Loads ISE in the background and automatically executes from synthesis through configuration.	
<b>CPU functionality</b>	Execution control	Go, Break, Step over, Trace into, Come	
	Debugging mode	MDM	
	Register, memory operation	Supports referencing/editing of register and memory and downloading to memory while in break.	
	Software break	256 points	
	CPU break	By setting hardware debug logic when building MicroBlaze with EDK. By default, for programs: 1 point; for data: 0 point.	
<b>Analyzer feature</b>	Flash memory support	In addition to downloading to a range of flash memories, it also supports debugging features such as software break settings and memory rewriting feature. Furthermore, it allows to add new device easily.	
	Execution time measurement	Measures user application program execution times in us with a 32-bit counter	
	Capacity	8K frame(s)	
	Sampling clock	Asynchronous, 20MHz	
	Input voltage level	Vref = 3.3V	VIH = MIN 2.0V VIL = MAX 0.8V
		Vref = 2.5V	VIH = MIN 1.7V VIL = MAX 0.7V
	Trigger settings	Pattern condition, Edge option	
	Trigger position	Any of 5 positions between START and END can be specified.	
Triggering mode	Trigger stop/break asynchronous to or in synchronization with CPU execution		
Number of Channels	2 channels		
<b>Standard debugger</b>		CSIDE for F-SightXstick MicroBlaze-E	

\*1: For details on supported devices, please contact us.

\*2: To use FPGA features, in order to implement FPGA functionality, ISE needs to be installed on the computer you use.

\*3: For the state of support provision for the latest version of service pack, please contact us.

**Main specifications**

<b>General specifications</b>	Current consumption	DC5V Max. approx. 250mA (Supports USB VBus)	
	Dedicated AC adapter	Not required (with VBus support)	
	Outside dimensions	102mm (W) x 49mm (D) x 22mm (H)	
	Host I/F	USB mini-B (5-pinned) connector	
	Supported OSs	Windows2000 / WindowsXP / Windows Vista / Windows 7	
	Recommended operating environment *4	CPU	Core2Duo equivalent or higher
		Installed memory	2048MBytes or larger
Hard disk		Requires free space of 150MBytes or more	
Supported USB		USB2.0	
<b>Support System</b>		Yes	

\*4: If you wish to use FPGA functionality, do observe the recommended operating environment for Xilinx-made ISE.

**Optional hardware**

Product name	Description
FX-ADP-FLY6-2mm14-E	Conversion adapter for connecting F-SightXstick MicroBlaze to Xilinx-made development board implemented with the (14-pin/2mm-pitched) connector for JTAG communication with FPGA.

# F-SightXstick



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