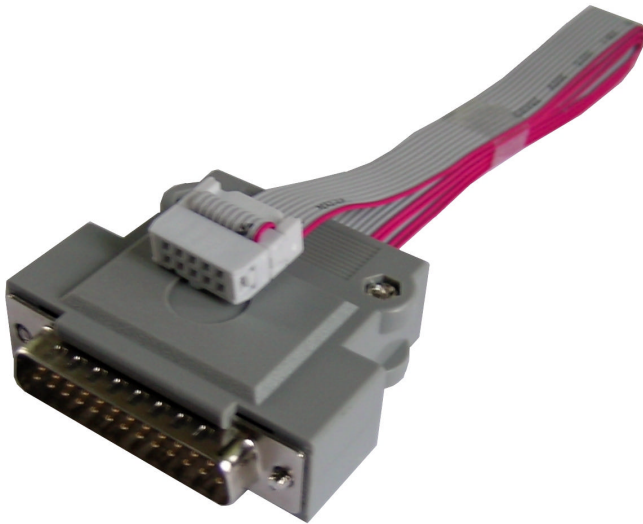

General description

P009.08 is a low cost and ready to use, compact PC parallel port (LPT) based JTAG programmer cable for programming of XILINX CPLD- and FPGA-Chips. The JTAG programmer cable allows reliable programming of CPLD and FPGA based systems with supply voltages from 2,7V up to 5,0V and compatible with many commercial and open-source programming tools, that supports a XILINX Parallel Port Cable III programmer.

Features

- Low cost design
- Usable with any Parallel Cable III-compatible programming tools
- Simply PC parallel port (LPT) connection
- Flexible cable with 2x5 standard connector header
- Reliable programming of XILINX CPLDs and FPGAs
- Allows target supply voltages from 2,7 up to 5,0V
- Very low power consumption
- Conform to RoHS directive

Important notice

Please read these instructions for use carefully and keep them for later use, be sure to make them accessible to other users and observe information they contain.

Caution

- Protect your JTAG programmer cable from impact with hard objects, moisture, dust, oil, chemicals, great temperature fluctuation and closeness to sources of heat.
- Connect the JTAG programmer cable only at de-energized target system.
- Strictly pay attention to correct polarity when attach connector header to the target system.
- Don't use JTAG programmer cable with unknown, incompatible or damaged target system.
- Don't use JTAG programmer cable with target systems connected directly to mains.
- If JTAG programmer cable connected to the target system, the target system may have improper or/and unattended functionality.

Disposal

Please dispose of the JTAG programmer cable in accordance with the directive 2002/96/EG – WEEE (Waste Electrical and Electronic Equipment). If you have any question, please refer to the local authorities responsible for waste disposal.

Absolute maximum ratings

Stresses beyond those listed under "Absolute maximum ratings" may cause permanent damage to the product. These are stress ratings only and functional operation of the product under these or any other conditions beyond those indicated in the operational sections of the specification are not implied. Exposure to absolute maximum rating conditions for extended periods may affect product reliability.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Maximal supply voltage	$V_{CC\text{MAX}}$	Applied to "VCC" and "GND" cable terminals.	-0,5	-	+5,5	V
Maximal input voltage	$V_{IN\text{MAX}}$	Applied to "TMS", "TCK", "TDI", "TDO" and "GND" cable terminals.	-0,5	-	+5,5	V
Maximal output current	$I_{O\text{MAX}}$	Maximal sink/source current allowed at "TMS", "TCK" and "TDI" cable terminals.	-10	-	+10	mA
Ambient temperature	T_A		0	-	60	°C

Recommended operations conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Supply voltage	V_{CC}	Applied to "VCC" and "GND" cable terminals.	2,7	-	5,0	V
Input voltage	V_{IN}	Applied to "TMS", "TCK", "TDI", "TDO" and "GND" cable terminals.	-0,5	-	5,0	V
Output current	I_O	Sink/source current allowed at "TMS", "TCK" and "TDI" cable terminals.	-8	-	+8	mA
Ambient temperature	T_A		0	-	55	°C

Electrical specifications (DC)

Unless otherwise noted, all typical values at $V_{CC} = 5\text{ V DC}$, $T_A = 25\text{ °C}$. All Minimum/Maximum values are at conditions listed under "Recommended operating conditions".

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Supply voltage	V_{CC}	Applied to VCC and GND supply input terminals.	2,7	-	5,0	V
Supply current	I_Q	Supply voltage $V_{IN} = 5,0\text{ V}$	-	-	50	mA

Switching specifications (AC)

Unless otherwise noted, all typical values at $V_{CC} = 5,0\text{ V DC}$, $T_A = 25\text{ °C}$. All Minimum/Maximum values are at conditions listed under "Recommended operating conditions".

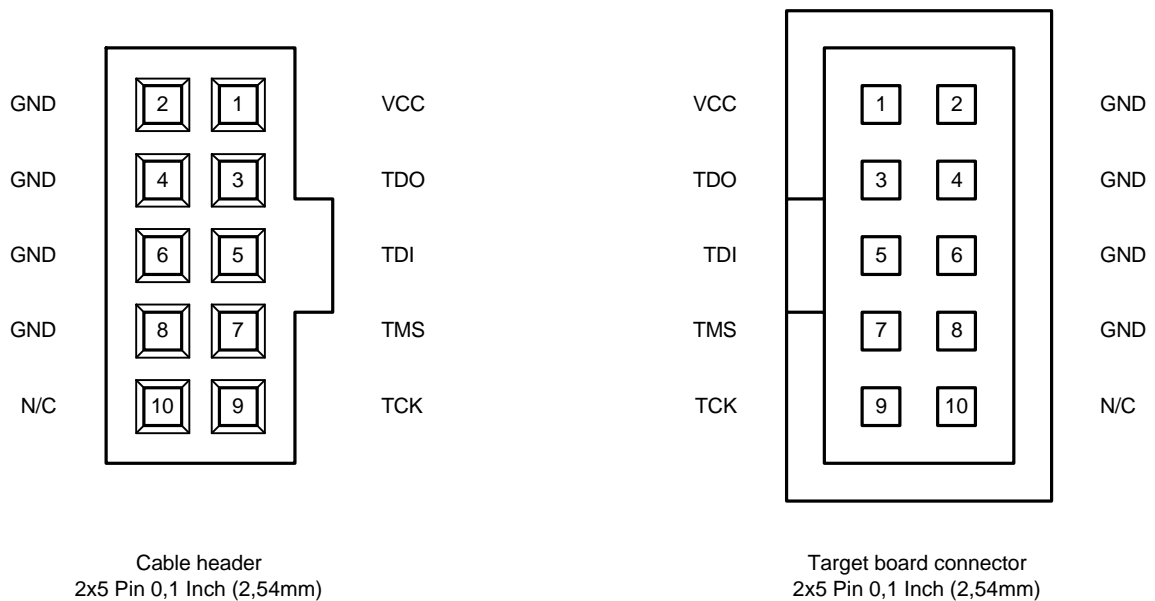
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Serial clock frequency	f_{SCK}	Supply voltage $V_{IN} = 5,0\text{ V}$, $C_{LOAD} = 50\text{ pF}$	-	-	2	MHz

Mechanical specifications

Unless otherwise noted, all typical values at $T_A = 25\text{ }^\circ\text{C}$.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Dimensions	-	L × W × H, Typical, without cable.	49,0 × 55,0 × 20,0			mm
Connection cable length	L _{CABLE}		-	0,70 ¹	-	m
Weight	m		-	48	-	g
Mounting torques	M _{MOUNT}	PC parallel port (LPT) mounting screws.	-	-	0,5	Nm

Connector header pin layout



Pin	Name	Function	Description
1	VCC	Input	Supply voltage
2	GND	-	GND
3	TDO	Input	Test data output
4	GND	-	GND
5	TDI	Output	Test data input
6	GND	-	GND
7	TMS	Output	Test mode select
8	GND	-	GND
9	TCK	Output	Test clock
10	N/C	None	Not connected

¹ Other cable length upon request.

Ordering information

The JTAG programming cable and adapters for different standard target connector layouts available in our online-store in Internet.

Product description	Part number
Low cost JTAG programmer cable for XILINX CPLDs and FPGAs	P009.08
Similar products	
Low cost ISP programmer cable for ATMEL AVR microcontrollers	P009.10
Low cost ISP programmer cable for ATMEL AVR microcontrollers	P009.12
Low cost JTAG programmer cable for ARM microcontrollers	P009.06
Low cost JTAG programmer cable for ALTERA CPLDs and FPGAs.	P009.09
Low cost JTAG programmer cable for Lattice® CPLDs and FPGAs.	P009.16

Terms and conditions of usage

The data contained in this product data sheet is exclusively intended for technically trained staff. Handling all high-voltage equipment involves risk of live. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application.

This product data sheet describes the characteristics of this product for which a warranty is granted. Any such warranty is granted exclusively pursuant the terms and conditions of the supply agreement. There will be no guarantee of any kind for the product and its characteristics.

Should you require additional product information to the data given in this product data sheet or which concerns the specific application of our product, please contact ANVILEX Technologies UG directly or the sales office which is responsible for you. For those that are specifically interested application notes are provided.

Due to technical requirements our product may contain dangerous substances. For information on the substances in question please contact ANVILEX Technologies UG directly or the sales office, which is responsible for you.

ANVILEX Technologies UG limits JTAG programmer cable use to low-volume engineering application only, and not for volume production use. ANVILEX Technologies UG shall not be liable any use of the JTAG programmer cable in production, or use of worn or improperly installed or use with incompatible systems or components. Should you intend to use the JTAG programmer cable in health or life endangering or life support applications, please notify.

ANVILEX Technologies UG reserves the right to make any technical modification of product and/or change this product data sheet without notice at any time in the course of product improvement.

Revision history

Rev.	Page	Description
0	All	1. Initial issue.
1	3	1. Connector header pin layout table: Table layout fixed.
2	4	1. Order information fixed.
3	1	1. Text mistake fixed.
	4	1. Contact data updated.
4	4	1. Similar products added.

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Revision: 4; Date: 01.12.2009