NeftyTouch™
Parallel Port Download Adapter (NEF-P-A)

Features

- Reliable and cost effective replacement for the Altera Corporation **ByteBlaster** and **ByteBlasterMV** download cable.
- Allows PC users to perform the following functions:
  - Program **MAX ® 9000, MAX 7000S, and MAX 7000A/B** devices in-system via a standard parallel port interface
  - Configure **FLEX ® 20Kx, 10Kx, FLEX 8000, FLEX 6000** devices and future generation of devices that requires I/O signal levels below 3.3 V
- Supports operation while powered up with any voltages of I/O pins **1.8 V – 5.5 V**
- Provides reliable and low-cost method for in-system programming
- Downloads data from the MAX+PLUS ® II development software
- Interfaces with a standard 25-pin parallel port on PCs
- Uses a 10-pin ALTERA Corporation compatible circuit board connector

Functional Description

The **NeftyTouch™** parallel port download adapter **(ordering code: NEF-A-P)** is a hardware interface converter of a standard PC parallel port (LPT port) to the 10 pin on-board connector.
Adapter provides electrical conversion of the signals between 5 V logic levels for the LPT port and multi-voltage signal levels used on the different EPLDs and FPGAs.

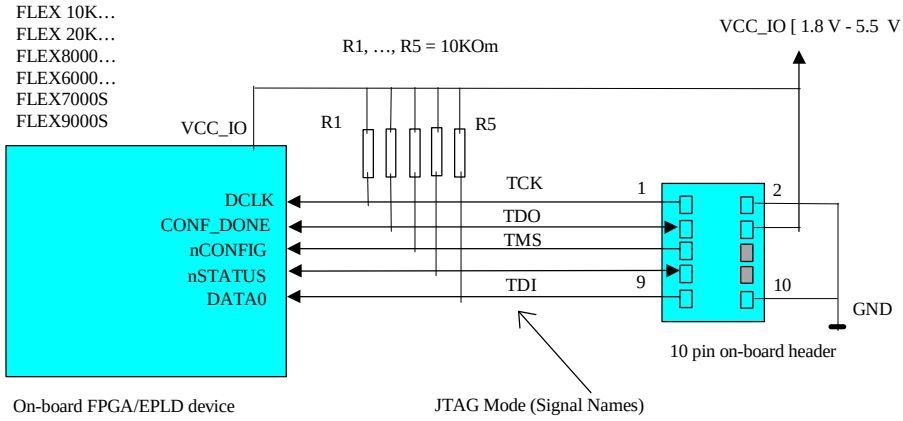
Download Modes

The **NeftyTouch™** adapter provides two download modes:

- Passive serial (PS) mode—used for configuring FLEX 20Kx, 10K, FLEX 8000, and FLEX 6000 devices
- JTAG mode—industry-standard Joint Test Action Group (JTAG) interface for programming or configuring FLEX 20Kx, 10K, MAX 9000, MAX 7000S, and MAX 7000A, MAX7000B devices

NeftyTouch™ Adapter Connections

The **NeftyTouch™** adapter has a 25-pin male header that connects to the PC parallel port directly or through the extender cable **(ordering code: NEF-EXT-25FM25),** and a 10-pin female plug that connects to the circuit board. Data is downloaded from the PC's parallel port through the **NeftyTouch™** adapter to the circuit board.



NeftyTouch™ adapter is not sensitive to the level of the power supply that powers-up programmable device, it can accept any voltage from 1.8V to 5.5 V .

NeftyTouch™ Header & Plug Connections

The 25-pin male header connects to a parallel port with a standard parallel cable.

The 10-pin female plug connects to the 10-pin male header on the circuit board containing the target device(s).

The target circuit board must supply V_{CC} and ground to the **NeftyTouch™** adapter. V_{CC} pin of the target board 10-pin header has to be connected to the Vcc_IO of the first programmable device in the chain.

Black Color Strip and the arrow sign on the 10-pin connector define pin 1 as a key.

Operating Conditions

The following summarizes the absolute maximum ratings, recommended operating conditions, and DC operating conditions for the **NeftyTouch™** adapter.

If you need an additional information on the configuration modes go to the following sources:

- http://www.altera.com/html/literature/lisp.html
- Application Note 59 (Configuring FLEX 10K Devices)
http://www.altera.com/html/literature/lisp.html
- Application Note 33 (Configuring FLEX 8000 Devices)
http://www.altera.com/html/literature/lisp.html
- Application Note 38 (Configuring Multiple FLEX 8000 Devices)
http://www.altera.com/html/literature/lisp.html
- Application Note 87 (Configuring FLEX 6000 Devices)
http://www.altera.com/html/literature/lisp.html
- Application Note 39 (IEEE 1149.1 (JTAG) Boundary-Scan Testing in Altera Devices)
http://www.altera.com/html/literature/lisp.html
- ByteBlaster Parallel Port Download cable Data Sheet, ver. 2.01
http://www.altera.com/html/literature/lisp.html

NEF Design, Inc.
1149 Danbury Drive
San Jose, CA 95129
Tel. /Fax: (408) 446-1694
http://www.nefdesign.com
Sales:
(408) 446 - 1694