



To configure 1.5-V APEX II, 1.8-V APEX 20KE, 2.5-V APEX 20K, and Excalibur, Mercury, ACEX 1K, and FLEX 10KE devices using the ByteBlasterMV download cable, connect the pull-up resistors to a 3.3-V power supply, and the cable's VCC pin to a 3.3-V power supply, and the device's VCCINT pin to an appropriate 2.5-V, 1.0-V, or 1.5-V power supply. For PS configuration, the device's VCCIO pin must be connected to a 2.5-V or 3.3-V power supply. The ByteBlasterMV VCC pin must be connected to 3.3 V for APEX II, Mercury, ACEX 1K, APEX 20K, and FLEX 10KE JTAG configuration, or MAX 7000A and MAX 3000A JTAG in-system programming. The device VCCIO pin can be connected to either a 2.5-V or 3.3-V power supply.

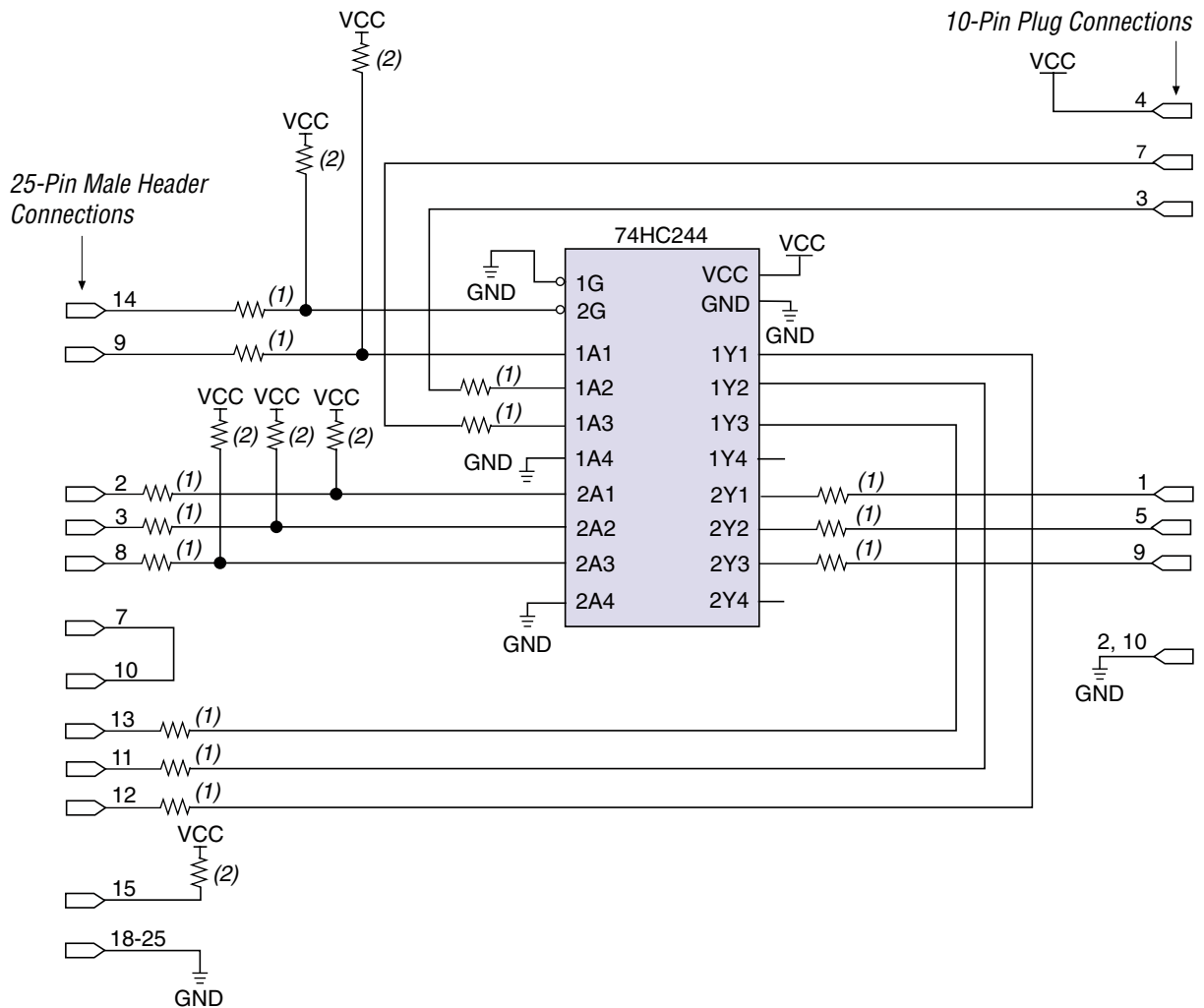
ByteBlasterMV Header & Plug Connections

The 25-pin male header connects to a parallel port with a standard parallel cable. [Table 1](#) identifies the pins and the download modes.

Table 1. ByteBlasterMV 25-Pin Header Pin-Outs		
Pin	PS Mode Signal Name	JTAG Mode Signal Name
2	DCLK	TCK
3	nCONFIG	TMS
8	DATA0	TDI
11	CONF_DONE	TDO
13	nSTATUS	—
15	VCC	VCC
18 to 25	GND	GND

Figure 2 shows a schematic of the ByteBlasterMV download cable.

Figure 2. ByteBlasterMV Schematic



Notes:

- (1) All series resistors are 100Ω.
- (2) All pull-up resistors are 2.2kΩ.

The 10-pin female plug connects to a 10-pin male header on the circuit board containing the target device(s). Figure 3 shows the dimensions of the female plug.

Figure 3. ByteBlasterMV 10-Pin Female Plug Dimensions

Dimensions are shown in inches. The spacing between pin centers is 0.1 inch.

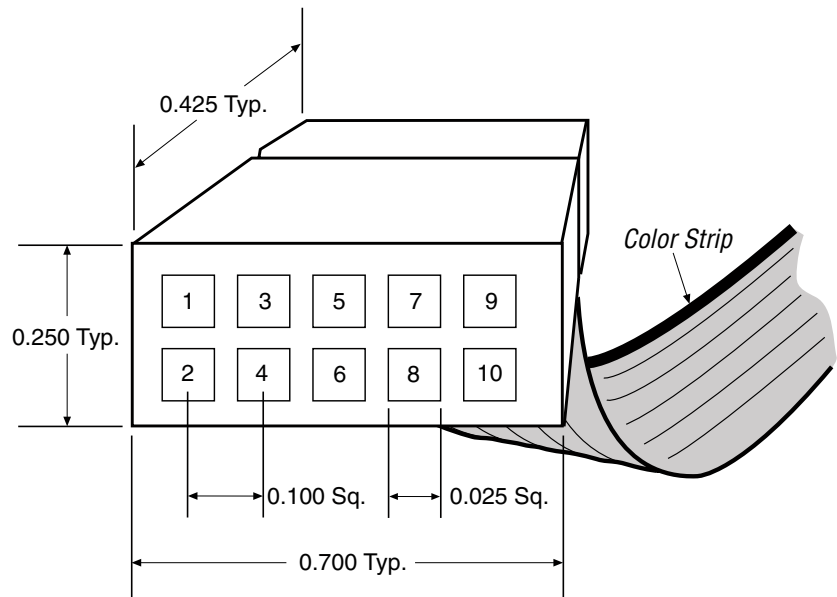


Table 2 identifies the 10-pin female plug's pin names for the corresponding download mode.

Table 2. ByteBlasterMV Female Plug's Pin Names & Download Modes

Pin	PS Mode		JTAG Mode	
	Signal Name	Description	Signal Name	Description
1	DCLK	Clock signal	TCK	Clock signal
2	GND	Signal ground	GND	Signal ground
3	CONF_DONE	Configuration control	TDO	Data from device
4	VCC	Power supply	VCC	Power supply
5	nCONFIG	Configuration control	TMS	JTAG state machine control
6	—	No connect	—	No connect
7	nSTATUS	Configuration status	—	No connect
8	—	No connect	—	No connect
9	DATA0	Data to device	TDI	Data to device
10	GND	Signal ground	GND	Signal ground

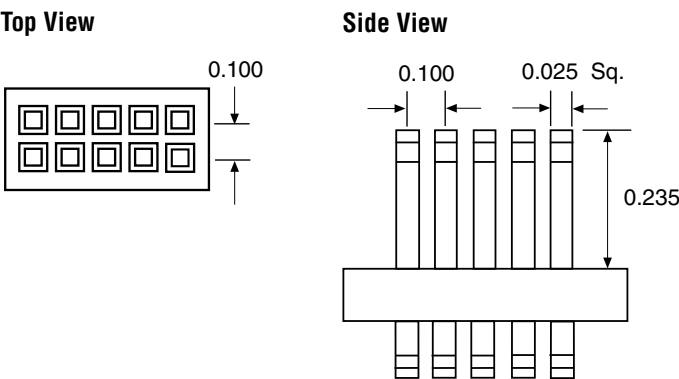
 The circuit board must supply V_{CC} and ground to the ByteBlasterMV cable.

Circuit Board Header Connection

The ByteBlasterMV 10-pin female plug connects to a 10-pin male header on the circuit board. The 10-pin male header has two rows of five pins, which are connected to the device’s programming or configuration pins. The ByteBlasterMV cable receives power and downloads data via the male header. Figure 4 shows the dimensions of a typical 10-pin male header.

Figure 4. 10-Pin Male Header Dimensions

Dimensions are shown in inches.



**Operating
Conditions**

Tables 3 through 5 summarize the absolute maximum ratings, recommended operating conditions, and DC operating conditions for the ByteBlasterMV cable.

Table 3. ByteBlasterMV Cable Absolute Maximum Ratings					
Symbol	Parameter	Conditions	Min	Max	Unit
V_{CC}	Supply voltage	With respect to ground	−0.5	7.0	V
V_I	DC input voltage	With respect to ground	−0.5	7.0	V

Table 4. ByteBlasterMV Cable Recommended Operating Conditions					
Symbol	Parameter	Conditions	Min	Max	Unit
V_{CC}	Supply voltage, 5.0-V operation		4.5	5.5	V
	Supply voltage, 3.3-V operation		3.0	3.6	V