Table 1 shows the I/O pins for the EPC16 100-pin plastic quad flat pack (PQFP) package.

| Table 1. EPC16 Configurat | | | |
|---------------------------|----------------------------|--|---|
| Pin Name | Pin Type | Description | 100-Pin PQFP |
| EXCLK | Input | External clock source. | 61 |
| DCLK | Output | Configuration devices drive this signal to the programmable logic device (PLD) as a configuration clock. | 11 |
| DATA0 | Output | PLD configuration output data bus. | 73 |
| DATA1 | Output | PLD configuration output data bus. | 84 |
| DATA2 | Output | PLD configuration output data bus. | 88 |
| DATA3 | Output | PLD configuration output data bus. | 91 |
| DATA4 | Output | PLD configuration output data bus. | 96 |
| DATA5 | Output | PLD configuration output data bus. | 10 |
| DATA6 | Output | PLD configuration output data bus. | 9 |
| DATA7 | Output | PLD configuration output data bus. | 8 |
| OE | Open-Drain Input/Output | Configuration devices sense that OE goes high, before starting PLD configuration. | 23 |
| n INIT CONF | Output | Initiate configuration. | 16 |
| nCS | Input | Connected to CONF_DONE in the PLD. The PLD will drive it low, when OE asserted. | 60 |
| TDI | Input | Joint Test Action Group (JTAG) data input. | 42 |
| TDO | Output | JTAG data output. | 44 |
| TMS | Input | JTAG data output. JTAG mode selection. | 48 |
| TCK | Input | JTAG mode selection. JTAG clock | 35 |
| PGM1 | Input | Select one of eight pages that contains configuration data. | 13 |
| PGM0 | Input | Select one of eight pages that contains configuration data. | 14 |
| PGM2 | Input | Select one of eight pages that contains configuration data. | 15 |
| | | Select 2 ms or 100 ms power-on reset (POR). | 66 |
| PORSEL | Input | | 71 |
| TM0 | Input | Select test mode for configuration device. | |
| TM1 | Input | Select test mode for configuration device. Ground pins. | 40 |
| GND | Supply | | 2, 41, 58, 70, 69, 79 |
| NC | No Connect | No Connect pins. | 3, 4, 18, 19, 20, 30, 63, 64, 76, 77 |
| Floating (1) | Unconnected | Unconnected pins. | 7, 24, 57, 74 |
| BYTE# (2) | Input | Flash byte enable. Connected to VCC. | 5 |
| VCC | Supply | Power supply pins. | 12, 22, 59, 67, 68, 92 |
| VCCW | Supply | Flash program/erase power supply. | 43 |
| C -WE# | Input | Controller write enable pin. Should be connected to F-WE# on the board. | 33 |
| F -WE# | Input | Flash write enable pin. Should be connected to C-WE# on the board. | 38 |
| CE# | Input | Flash pin that activates the flash memory. | 78 |
| OE# | Input | Flash pin that enables the drivers of flash output pins. | 80 |
| RY/BY# (3) | Output | Flash ready busy pin. Will be asserted when write or erase operation is completed. | 37 |
| F - RP# | Input | Flash pin which resets the flash memory. Should be connected to ${\tt C-RP\#}$ on the board. | 39 |
| C - RP# | Input | Flash pin that resets the flash memory. Should be connected to ${\tt F-RP\#}$ on the board. | 72 |
| WP# | Input | Flash pin that should be tied to VCC or GND on the board. | 45 |
| F-A0 | Input | Address input to flash memory. Should be connected to C-A0 on the board. | 75 |
| C-A0 | Input | Address input to flash memory. Should be connected to F-A0 on the board. | 65 |
| F-A1 | Input | Address input to flash memory. Should be connected to C-A1 on the board. | 56 |
| C-A1 | Input | Address input to flash memory. Should be connected to F-A1 on the board. | 62 |
| A2 | Input | Address input to flash memory. | 55 |
| A3 | Input | Address input to flash memory. | 54 |
| A4 | Input | Address input to flash memory. | 53 |
| A5 | Input | Address input to flash memory. | 52 |
| A6 | Input | Address input to flash memory. | 51 |
| A7 | Input | Address input to flash memory. | 50 |
| A8 | Input | Address input to flash memory. | 34 |
| | 1put | | 32 |

Altera Corporation 1

| Pin Name | Pin Type | Description | 100-Pin PQFP |
|----------|--------------|---|--------------|
| A10 | Input | Address input to flash memory. | 31 |
| A11 | Input | Address input to flash memory. | 29 |
| A12 | Input | Address input to flash memory. | 28 |
| A13 | Input | Address input to flash memory. | 27 |
| A14 | Input | Address input to flash memory. | 26 |
| F-A15 | Input | Address input to flash memory. Should be connected to C-A15 on the board. | 25 |
| C-A15 | Input | Address input to flash memory. Should be connected to F-A15 on the board. | 21 |
| F-A16 | Input | Address input to flash memory. Should be connected to C-A16 on the board. | 6 |
| C-A16 | Input | Address input to flash memory. Should be connected to F-A16 on the board. | 17 |
| A17 | Input | Address input to flash memory. | 49 |
| A18 | Input | Address input to flash memory. | 47 |
| A19 | Input | Address input to flash memory. | 46 |
| A20 (3) | Input | Address input to flash memory. | 36 |
| 000 | Input/Output | Data bus that interface with flash memory and controller. | 81 |
| DQ1 | Input/Output | Data bus that interface with flash memory and controller. | 83 |
| DQ2 | Input/Output | Data bus that interface with flash memory and controller. | 86 |
| DQ3 | Input/Output | Data bus that interface with flash memory and controller. | 89 |
| DQ4 | Input/Output | Data bus that interface with flash memory and controller. | 93 |
| DQ5 | Input/Output | Data bus that interface with flash memory and controller. | 95 |
| DQ6 | Input/Output | Data bus that interface with flash memory and controller. | 98 |
|)Q7 | Input/Output | Data bus that interface with flash memory and controller. | 100 |
| 9Q8 | Input/Output | Data bus that interface with flash memory and controller. | 82 |
| DQ9 | Input/Output | Data bus that interface with flash memory and controller. | 85 |
| Q10 | Input/Output | Data bus that interface with flash memory and controller. | 87 |
| Q11 | Input/Output | Data bus that interface with flash memory and controller. | 90 |
| Q12 | Input/Output | Data bus that interface with flash memory and controller. | 94 |
| 0Q13 | Input/Output | Data bus that interface with flash memory and controller. | 97 |
| Q14 | Input/Output | Data bus that interface with flash memory and controller. | 99 |
| DQ15 | Input/Output | Data bus that interface with flash memory and controller. | 1 |

Notes:

- (1) These pins are internally connected within the package. That is why they should be left unconnected. (2) BYTE# should be connected to VCC. (3) A20 (pin 36) and RY/BY# (pin 37) should be floating in EPC16.

Altera Corporation 2