# DP83848 AspenPHY Demo II Board
# Rock Hopper
# Setup Instruction (v1.1)

**Revision History:**
V1.0 Initial Release
V1.1 Added important note to option 2 of Power Requirements.

**Power requirements:**
The device requires 3.3V to operate. The on board regulators convert input voltage into 3.3V for the device. Voltage for the device can either be applied through an MII connection, or connecting to a Power Over Ethernet PSE device through these pins: (+) for 1, 2, 4, 5 and (-) for 3, 6, 7, 8 of RJ-45 connector, or an external power supply.

1. *MII connection:* Connect directly to SmartBits or through an MII cable.
   A voltage regulator, U4, will convert 5V generates through the MII connection to 3.3V for the device. Need to install J58.

2. *PSE device through pins:* (+) for 1, 2, 4, 5 and (-) for 3, 6, 7, 8 *of RJ-45 connector.* An onboard POE circuit will detect and convert the voltage to 3.3V for the device. Need to populate 0 ohm resistors (R91, R92, R93, and R94).

   ***Important: Further finding indicates during hot swap, a significant amount of current presents at L2 caused damage to the LM5070. Prior to use this power option, L2 must be replaced with one zero ohm resistor.***

   Note: Tests in lab with 48V @ 4A supply showed that 75 ohm resistors (R101, R102, R103, R104), and R12 are okay to be populated while powering through pins: (+) 4,5 and (-) 7,8.

3. *External 3.3V power supply:* Remove jumper on J58 and resistor R12. Use J55 for external power connections.

**To access MDIO through SmartBits: add jumpers to J9.**

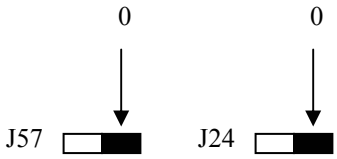
**For LED options: Add jumper to J30 pins 1-2, Add jumper to J31 pins 1-2, and Add jumper to J32 pins 1-2.**
The datasheet should be referenced for specific LED settings.

**Address settings:**

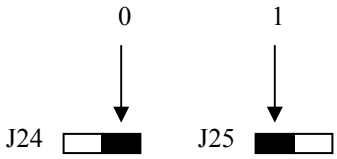
Setting jumpers to High = 1


Setting jumpers to Low = 0


The default of PHYAD0 = 1, result for Phy Address per jumper settings are:




PHY Address 02




PHY Address 5


PHY Address 03


PHY Address 07

**Configuration to use with different clocks:**

There are two options to choose: Oscillator and Crystal.

1. On this board, a crystal is used as clock input for the device.
2. To use with an oscillator, remove the zero ohm resistor at R63 and place it at R59.

**Table of jumpers:**

| Jumper | Name | Function |
|---|---|---|
| J1 | MII Header | Alternative connection for MII pins. |
| J3 | MDIX_EN | To Enable/Disable MDIX mode. (Default is Auto-MDIX Enable). |
| J4 | LED_CFG | To set LEDs configuration. See datasheet. |
| J5 | MII_MODE | To work with J17 for MII Mode configuration. See datasheet. |
| J6 (Not populated) | 25MHz_OUT | 25MHz clock output |
| J9 | MDIO/MDC | Allow MDIO/MDC signals connect from J1 to J13 |
| J13 | MII Male Connector | SmartBits interface |
| J15 | JTAG pins | JTAG interface |
| J16 | PWR_DWN/INT | To set Power Down and Interrupt Mode |
| J17 | SNI | To work with J5 for MII Mode configuration. See datasheet. |
| J18, J19, J20, J21, J22 | Ground Post | Randomly placed grounding posts |
| J57, J24, J25 | PHYAD [2:0] | Phy Addresses strap pins |
| J30, J31, J32 | AN_EN, AN1, AN0 | Auto-Negotiation strap pins |
| J50 | Connector | RJ-45 connector |
| J55 | External 3V3 | To apply external 3.3V supply to the board. J58 must be removed. |
| J56 | RESET_N | To apply external RESET |
| J58 | Global 3V3 | To allow global 3.3V supply to the board. |
| J59 | 50MHz | 50 MHz clock input for RMII mode |