# XXBX Power Shim-XBP User Guide

February 11, 2016

## 1 XBP Connections

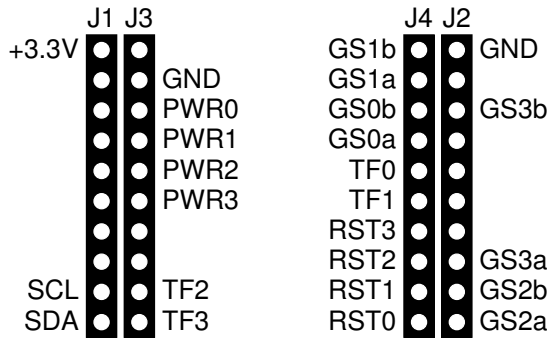


Figure 1: Boosterpack Connector XBH as Viewed from Top of PCB

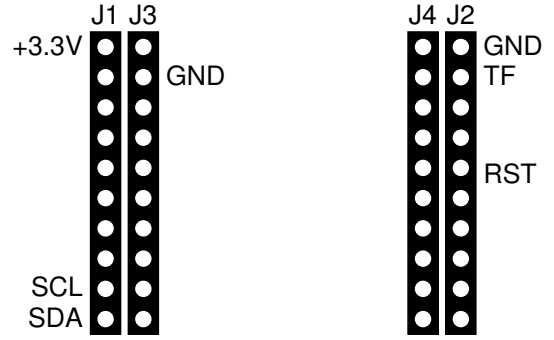


Figure 2: Boosterpack Connector XBD as Viewed from Top of PCB

## 2 XBX Devices under Test (XBD)

### 2.1 TI Stellaris® LM4F120 LaunchPad

Neither the Debug, nor the Device USB should be connected for power measurements. The *+3.3V* line on pin J1.1 of the boosterpack connector is connected directly to the In-Circuit Debugger. Therefore, it

Table 1: Pin Configuration of Boosterpack Connector for XBH

| Connector | Pin | Net | Comment |
|---|---|---|---|
| J1 | 1 | +3V3 | Supply Voltage from XBH for $I^2C$ pullup resistors on XBP0 |
| J1 | 9 | SCL | $I^2C$ Serial Clock |
| J1 | 10 | SDA | $I^2C$ Serial Data |
| J3 | 23 | PWR0 | Analog signal of current consumption of XBD0 from XBP0 |
| J4 | 37/38 | GS0a/GS0b | Gain select for current monitor of XBD0 on XBP0 |
| J4 | 36 | TF0 | Timer Flag from XBD0 |
| J4 | 31 | RST0 | Reset of XBD0 |
| J3 | 24 | PWR1 | Analog signal of current consumption of XBD1 from XBP1 |
| J4 | 39/40 | GS1a/GS1b | Gain select for current monitor of XBD1 on XBP1 |
| J4 | 35 | TF1 | Timer Flag from XBD1 |
| J4 | 32 | RST1 | Reset of XBD1 |
| J3 | 25 | PWR2 | Analog signal of current consumption of XBD2 from XBP2 |
| J2 | 11/12 | GS2a/GS2b | Gain select for current monitor of XBD2 on XBP2 |
| J3 | 29 | TF2 | Timer Flag from XBD2 |
| J4 | 33 | RST2 | Reset of XBD2 |
| J3 | 26 | PWR3 | Analog signal of current consumption of XBD3 from XBP3 |
| J2 | 13/18 | GS3a/GS3b | Gain select for current monitor of XBD3 on XBP3 |
| J3 | 30 | TF3 | Timer Flag from XBD3 |
| J4 | 34 | RST3 | Reset of XBD3 |
| J2 | 20 | GND | |
| J3 | 22 | GND | |

is recommended to select on the XBP to power the XBD via the external XBD connector and not via the boosterpack connector. On the TI Stellaris Launchpad, the VDD jumper has to be pulled and the external 3.3V has to be supplied to the right pin. The green power LED on the Launchpad lights up when the 3.3V are supplied to the left (wrong) pin. The *PWR Select* switch can be in any position and won't affect the measurements.

## 2.2 TI Tiva™ C Series TM4C123G LaunchPad

The circuit connections are the same as on the TI Stellaris LaunchPad. Please follow those instructions.

## 2.3 TI MSP430F5529 LaunchPad™

For precise current measurements remove all jumpers from the isolation jumper block with the exception of the ground (GND) jumper.

## 2.4 TI MSP430FR6989 LaunchPad™

For precise current measurements remove all jumpers from the isolation jumper block with the exception of the ground (GND) jumper.

Table 2: Pin Configuration of Boosterpack Connector for XBD

| Connector | Pin | Net | Comment |
|---|---|---|---|
| J1 | 1 | +3V3 | Supply Voltage, current is measured by XBP |
| J1 | 9 | SCL | $I^2C$ Serial Clock |
| J1 | 10 | SDA | $I^2C$ Serial Data |
| J2 | 16 | RST | Reset of XBD |
| J2 | 19 | TF | Timer Flag to start/stop execution timer on XBH |
| J2 | 20 | GND | |
| J3 | 22 | GND | |