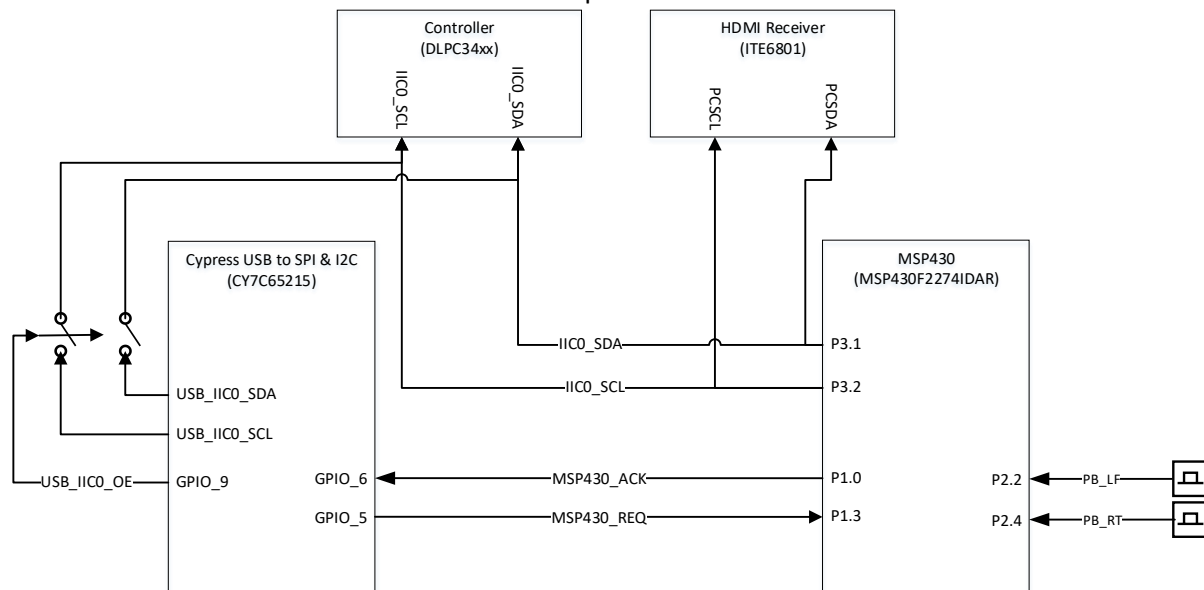


# DLPC34xx EVM I<sup>2</sup>C Access

## Overview

This document is relevant for the majority of (but not all) DLPC34xx EVMs. In general, TI has the following devices on the I<sup>2</sup>C bus:

- Controller (the DLPC34xx device): Main video device that sends data and commands to the DMD
- HDMI Receiver (ITE6801): This device decodes the HDMI data and sends parallel data to the DLPC34xx controller.
- Cypress USB to SPI & I<sup>2</sup>C adapter: This device enables a USB connection to a PC. The EVM GUIs utilize the Cypress SDK to send USB commands to the Cypress IC which are then converted to I<sup>2</sup>C commands to configure the DLPC34xx controller.
- MSP430: This programmable microprocessor configures both the DLPC34xx controller and the ITE6801 device and handles various button inputs.



If one desires communication with the DLPC34xx controller there are two primary options and there are two ways to disable MSP430 I<sup>2</sup>C communication to prevent I<sup>2</sup>C bus conflicts.

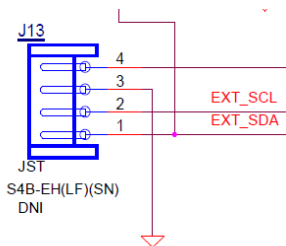
## DLPC34xx Controller Communication Options

### Option 1

Communicate via the [Cypress SDK](#) to send USB commands to the Cypress IC. These commands are then converted to I<sup>2</sup>C commands and sent to the DLPC34xx controller. One must first [prevent the MSP430 from accessing the bus](#).

### Option 2

Directly connect to the I2C bus using ones preferred method of I<sup>2</sup>C communication. TI often uses a Devasys device with the following connector:



One must also first prevent [MSP430 I2C access](#).

## Prevent MSP430 I<sup>2</sup>C Access

### Option 1

Use the Cypress SDK to perform the following handshake process.

1. Set Cypress IC GPIO 5 high to request access
2. Read Cypress IC GPIO 6 to make sure it is set to high
3. Set Cypress IC GPIO 9 high to start transaction

At this point the bus is free for use. To enable the MSP430 to again use the bus, reverse the process by doing the following:

1. Set Cypress IC GPIO 5 low to relinquish access
2. Read Cypress IC GPIO 6 to make sure it is set to low
3. Set Cypress IC GPIO 9 low to prevent transactions

### Option 2

Note this option doesn't truly prevent MSP430 I<sup>2</sup>C access; however, it prevents the majority of commands which usually enables successful use of the I<sup>2</sup>C bus.

1. Press the left and right push buttons
2. Observe the MSP2 LED flashing to indicate the process is complete

To enable the MSP430 to again use the bus again press the left and right push buttons and observe the MSP2 LED light go off.