

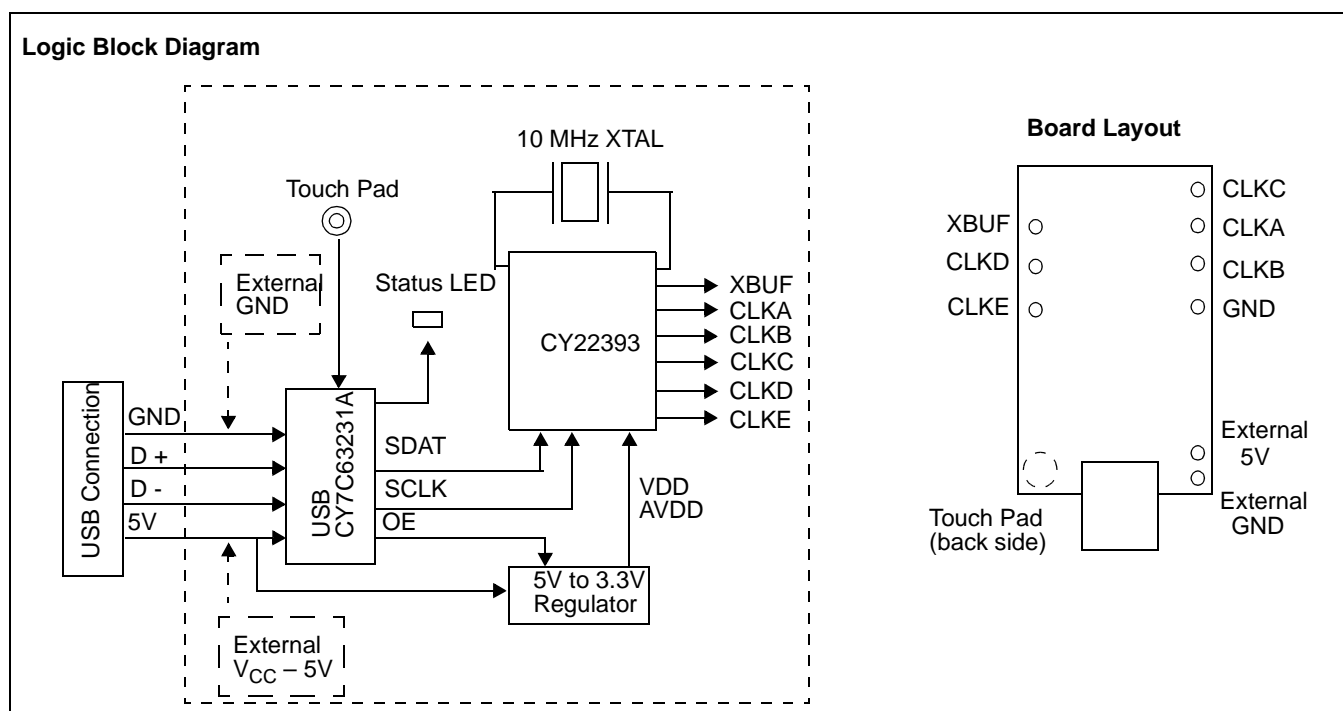


**CY30701**

# Peppermint Board

(CY22393 Candy Board)

| Features                         | Benefits  |
|----------------------------------|---|
| Demonstrate CY22393 capabilities | See actual waveforms from a JEDEC file you just created                   |
| CyClocksRT™ support              | Easy-to-use software configuration support, program on-the-fly in seconds |
| USB interface                    | Simple plug-and-play interface  |
| Built-in crystal                 | No external reference required for use                                    |
| Built-in test points             | Easily accessible probe points  |
| Compact design                   | Easily portable like a piece of candy                                     |



## CY30701 Peppermint Board

The CY30701 Peppermint board is a demo board that features our CY22393 serial programmable clock chip. The boards are USB-compatible and can run in stand-alone mode or with our Cypress's CyClocksRT™ software.

The Peppermint board can be used to serially program a CY22393 and measure the actual performance of your configuration. The datasheet has a broad jitter specification of maximum 400 ps, but there are millions of possible PLL and output frequency combinations that may yield much higher performance. The Peppermint board allows both a prospective user to see real performance or a systems engineer to see output phase relationships, and get a better feel for what the CY22393 is capable of doing. All the user needs is a computer running CyClocksRT with a USB connection and an oscilloscope to look at waveforms, or just an oscilloscope and 5V power supply to look at the preprogrammed configurations in the CY22393.

### How to Use the Boards

In order to use the Candy boards, users must have Windows™ 98 Second Edition (SE) Operating System or a later version installed on their computer. The user will just need to plug in the device and Windows should be able to detect it and install the appropriate drivers. If you are using Windows 98 SE you will need the Windows installation disk to install appropriate drivers.

Each Peppermint board features a preprogrammed CY22393 embedded onto the board. Once powered, the outputs should exhibit the default frequencies which were preprogrammed (see Table 1). The user can vary output frequencies by using the touch pad or by programming the part with CyClocksRT. When using an external power supply, do not connect the board to the USB port as this may damage both your computer and the candy board.

**Table 1. Default Configuration**

| I/O Pin | S2/Suspend = 0 | S2/Suspend = 1 |
|---------|----------------|----------------|
| CLKA    | 40             | 40             |
| CLKB    | 25             | 25             |
| CLKC    | 16.66667       | 16.66667       |
| CLKD    | 33.33          | 50             |
| CLKE    | 66.66          | 100            |
| XBUF    | 10             | 10             |

### Touch Pad

Each Peppermint board has a special touch pad built onto it that functions as a S2/suspend button. Just squeeze the "C" in the name "Cypress" (the touchpad is on the back side right under the "C") and the LED should blink, indicating that it has received the command. Each squeeze will toggle the S2/suspend pin from 0 to 1 or 1 to 0.

### SMA Connections

Each clock output probe point has the ground plane exposed on either side to enable a user to solder on an SMA connector. Due to space restrictions, only every other clock output can have an SMA connector.

### Using CyClocksRT with Peppermint Board

Users can also program the part using the Cypress CyClocksRT software that is found on the web. There are two ways the user can program the part on the candy boards: either open up a new or existing CY22393 JEDEC file, or select the "Options" menu and click on "Candy Board Setup" to program the part.

#### *Using a CY22393 JEDEC File in CyClocksRT to Program the Part*

The crystal embedded on the boards are 10-MHz crystals, so users should input 10-MHz as their REF when trying to program the part on-board with CyClocksRT.

Using the first option, the user can program the part on the candy board by opening a new or existing CY22393 JEDEC file. Once the candy board is plugged in, a "Send" button should appear on the bottom of the file next to the "Calculate" button. Once the desired configuration is set, the user should click on "Calculate" and then click on the "Send" button to send the program to the board. The LED on the board should blink and then stop, indicating that it has received the data.

#### *Using the Candy Board Setup in CyClocksRT to Program the Part*

If the user wants to program the board with a file that is not the currently opened version, they can do so using the "Candy Board Setup" option. Under the Options menu, select "Candy Board Setup." This will bring up the Candy Board Setup window. Select "CY22393" under "Candy Board List." By clicking on "Load Jedec," the user can select a file that is stored on the computer in order to program the candy board.



**Figure 1. Candy Board Set-up Window**

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