Digital clock on DE1-SoC FPGA board

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1. Overview

The objective of this project is to design a simple clock on the DE1-SoC board. The clock shows time as hours, minutes, and seconds using the seven segment LED displays on the board.

2. Description
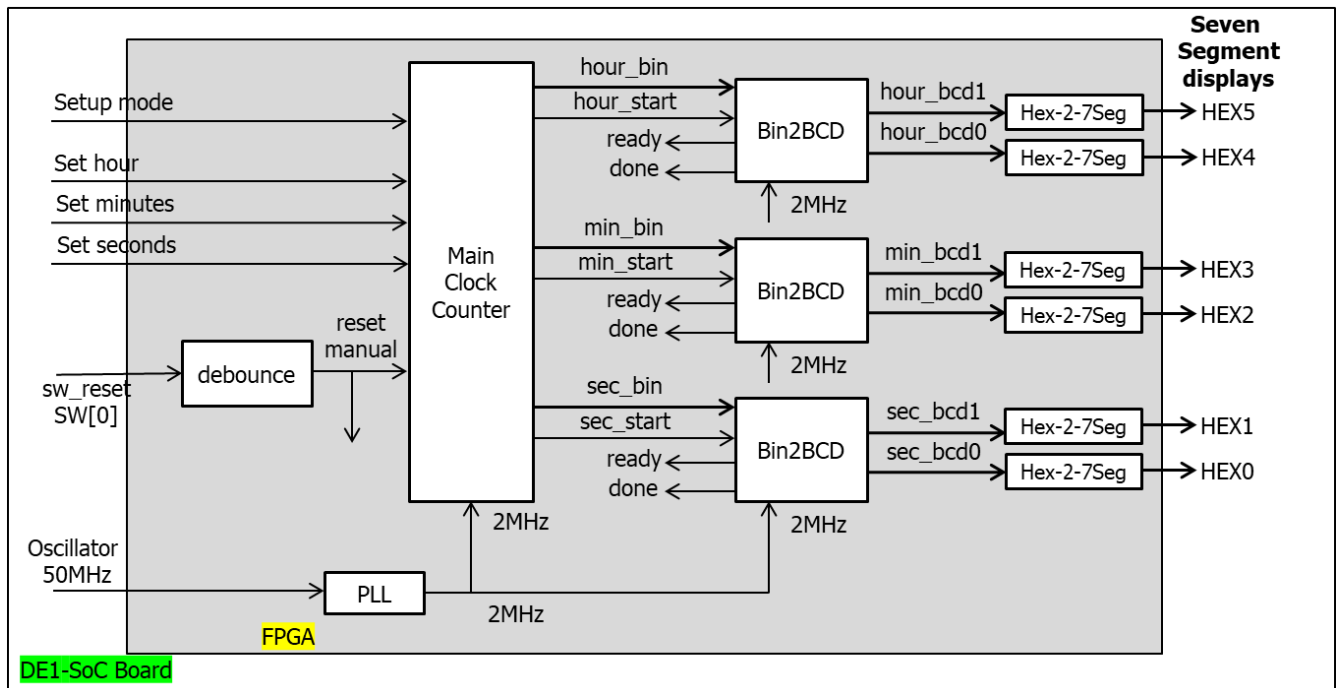
The block diagram is shown in Fig. 1.

Figure 1: Block diagram of the digital clock.

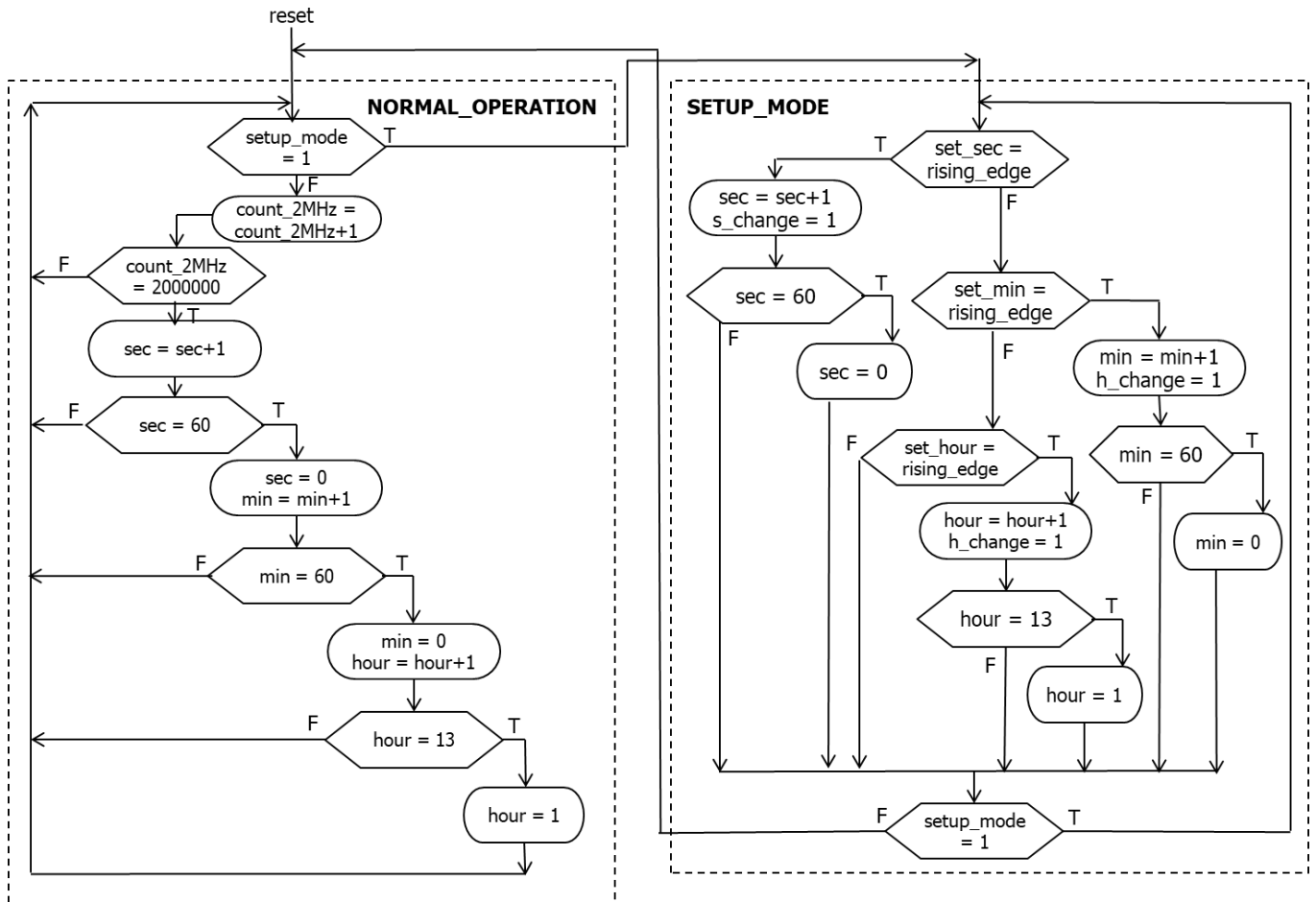The algorithmic state machine with datapath (ASMD) of the clock-counter is shown in Fig. 2.

Figure 2: ASMD of the clock design.