

Testing circuit We use a Cbit sign-magnitude adder to verify circuit operation. The sketch of the testing circuit is shown in Figure 3.8. The two input numbers are connected to the 8-bit switch, and the sign and magnitude are shown on two seven-segment LED displays. Two pushbuttons are used as the selection signal of a multiplexer to route an operand or the sum to the display circuit. The rightmost even-segment LED shows the 3-bit magnitude, which is appended with a 0 in front and fed to the hexadecimal to seven-segment LED decoder. The next LED displays the sign bit, which is blank for the plus sign and is lit with a middle LED segment for the minus sign. The two LED patterns are then fed to the time-multiplexing module, mux.