Appendix B

Wiring Diagrams and Schematics

The diagrams below display how each component was wired and were each connection was wired too.

- Prototype Board and Rabbit 2000 Microprocessor
- Master Prototype Board Wiring Diagram
- Slave Prototype Board Wiring Diagram
- Wireless Module Wiring Diagram
- Wiring LCD to Prototype Board Wiring Diagram
- 5-Digit 7-Segment Display Wiring Diagram
- 7-Segment Display Driver IC and Inverter IC wiring diagram to 7-Segment Display and Prototype Board
- Keypad to Keypad Encoder to Prototype Board Wiring Diagram
- LED Wiring Diagram
Rabbit 2000 Microprocessor and Prototype Board
Master Prototype Board Wiring Diagram

Gnd Vcc

Pin 1 from LCD
Pin 11 from LCD
Pin 13 from LCD
Pin 4 from LCD
Pin 10 from Wireless
Pin 4 on Wireless
Pin 15 from LCD
Pin 3 from LCD
Pin 3 from LCD
Pin 16 from LCD
Pin 11 from Wireless

Top of Prototype Board

Gnd Vcc
Pin 2 from LCD
Pin 12 from LCD
Pin 14 from LCD
Pin 6 from LCD
PA0 PA1
PA2 PA3
PA4 PA5
PA6 PA7
PB0 PB1
PB2 PB3
PB4 PB5
PE0 PE1
PC0 PC1
Pin 3 on Wireless
A2 A1
PC2 PC3
XMIT Pin on keypad encoder
PD0 PD1
PD2 PD4

Keypad Vcc
LED Vcc
Keypad Gnd
LED Gnd
Wiring LCD to Prototype Board Wiring Diagram

Top Edge of Prototype Board

Pin 1 on LCD
Pin 11 on LCD
Pin 13 on LCD
Pin 4 on LCD
Pin 3 from LCD (Pos)
Pin 15 from LCD (Pos)

Pin 2 on LCD
Pin 12 on LCD
Pin 14 on LCD
Pin 6 on LCD

Pin 3 from LCD (Neg)

Holes in LCD
Back of LCD

LCD Interface Pin Function

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Symbol</th>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VSS</td>
<td>0V</td>
<td>Ground</td>
</tr>
<tr>
<td>2</td>
<td>VDD</td>
<td>5.0V</td>
<td>Supply Voltage for logic</td>
</tr>
<tr>
<td>3</td>
<td>V0</td>
<td>(Variable)</td>
<td>Operating voltage for LCD</td>
</tr>
<tr>
<td>4</td>
<td>R5</td>
<td>H.L</td>
<td>H: DATA, L: Instruction code</td>
</tr>
<tr>
<td>5</td>
<td>R/W</td>
<td>H.L</td>
<td>H: Read(MPU – Module) L: Write(MPU – Module)</td>
</tr>
<tr>
<td>6</td>
<td>E</td>
<td>H.H –</td>
<td>Chip enable signal</td>
</tr>
<tr>
<td>7</td>
<td>DB0</td>
<td>H.L</td>
<td>Data bit 0</td>
</tr>
<tr>
<td>8</td>
<td>DB1</td>
<td>H.L</td>
<td>Data bit 1</td>
</tr>
<tr>
<td>9</td>
<td>DB2</td>
<td>H.L</td>
<td>Data bit 2</td>
</tr>
<tr>
<td>10</td>
<td>DB3</td>
<td>H.L</td>
<td>Data bit 3</td>
</tr>
<tr>
<td>11</td>
<td>DB4</td>
<td>H.L</td>
<td>Data bit 4</td>
</tr>
<tr>
<td>12</td>
<td>DB5</td>
<td>H.L</td>
<td>Data bit 5</td>
</tr>
<tr>
<td>13</td>
<td>DB6</td>
<td>H.L</td>
<td>Data bit 6</td>
</tr>
<tr>
<td>14</td>
<td>DB7</td>
<td>H.L</td>
<td>Data bit 7</td>
</tr>
<tr>
<td>15</td>
<td>A</td>
<td>_</td>
<td>LED –</td>
</tr>
<tr>
<td>16</td>
<td>K</td>
<td>_</td>
<td>LED –</td>
</tr>
<tr>
<td>17</td>
<td>Vcc</td>
<td>_</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>NC</td>
<td>_</td>
<td></td>
</tr>
</tbody>
</table>

Pin 3 from LCD

Pin 15 from LCD

5V Potentiometer

6.2kΩ Max

6.2Ω

Pin 15 from LCD
7-Segment Display Driver IC and Inverter IC wiring diagram to 7-Segment Display and Prototype Board