

LED DIMMER DEMOBOARD USER MANUAL

Features:

- Dial a number. Dial a number (binary version of the number displayed), show the RGB LED's providing a visual "busy" (1st call – red) and "non busy" signal (2nd call – green). Rule is: one call busy, next one non busy, then busy ...
- Programmable three "fun" patterns (so far, the 3 patterns shows LED's rotating anti-clockwise where color and rotating speed are fully programmable)
- Programmable backlight control
- Emulation of a battery discharge, from fully charged to discharged
- Auto Demo mode

Note: At any time, the user can reset the complete system by pushing twice the RESET button located in the keypad controller board, close to the P89LV51RD2. That allows the program to go in a know state (all RGB LED's are off, the 4 white LEDs are on (low brightness) and the miscellaneous/status LEDs are off (Power up default state)

1. Dial a number:

- a) Phone number: xxx-xxx-xxxx → 10 digits
- b) Pressed key is displayed with LD5 to LD8 (binary version)

	LD5	LD6	LD7	LD8
0	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF
7	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON

Table 1. Digit display (X = LED on)

- c) If more than 10 digits are dialed, LD5 to LD8 will all blink at 1 Hz / 50% duty cycle.
- d) Number is dialed by pushing SND (LD5 to LD8 are then off)
 - If the line is busy, RGB LED's will all be red and blink at 1 Hz, 50% duty cycle
 - If the line is not busy, RGB LED's will all be green and blink at 1 Hz, 50% duty cycle
- e) Call is ended by pushing END (Blinking RGB LED's (Red or Green are then off)

Note: to be able to dial a number, be sure that you are not in LED programming mode (LD12 off) or in emulation mode (LD11 off) – See below for more details.

2. LED programming – "Fun" patterns and backlight control:

Fun pattern programming (RGB LED's) and backlight control (White LED's)

Programming mode is entered by pushing F1 → LD12 (Blue LED) is blinking at 1Hz pulse

- a) 3 different fun patterns can be programmed:
 - Pattern 1 enabled by pushing key 1 → LD5 is then on (LD6, LD7, LD8 off)
 - Pattern 2 enabled by pushing key 2 → LD6 is then on (LD5, LD7, LD8 off)
 - Pattern 3 enabled by pushing key 3 → LD7 is then on (LD5, LD6, LD8 off)

For each pattern:

- Key 2 = decrease value of red
- Key 3 = increase value of red
- Key 5 = decrease value of green
- Key 6 = increase value of green
- Key 8 = decrease value of blue
- Key 9 = increase value of blue
- Key 0 = decrease speed
- Key # = increase speed

Pattern saved by pushing END → the corresponding LD5 (Pattern 1), LD6 (Pattern 2) or LD7 (Pattern 3) is then off, LD12 keeps blinking. Pushing END a 2nd time will leave the Programming mode (LD12 stops blinking).

b) Brightness control:

- Entered by pushing key 4 → LD8 is then on (LD5, LD6, LD7 off)

To control the brightness:

- Brightness decreased by pushing key 2
- Brightness increased by pushing key 3

New brightness saved by pushing END (LD8 is then off). Pushing END a 2nd time will leave the Programming mode (LD12 stops blinking).

LED programming mode left by pushing END → LD12 stops blinking

3. Emulation/Auto Mode

Emulation/Auto mode is entered by pushing F2 → LD11 (Red or Green LED, depending on the board Rev.) is blinking at 1Hz pulse.

a) Battery Status emulation mode:

- Entered by pushing key 1 → LD9 blinking Green at 1 Hz, High duty cycle and LD5 to LD8 on (Battery fully charged)
- Battery discharge emulated by keeping key 3 pushed
 - 1) LD5 off, no change on LD9 (75% charged)
 - 2) LD6 off, LD9 blinking Orange (Red + Green on), duty cycle a little bit shorter than before (50 % charged)
 - 3) LD7 off, LD9 blinking Red, shorter duty cycle (25 % charged)
 - 4) LD8 off, LD9 blinking Red, very short pulse (battery quasi-discharged)
- Another simulation can be launched by pushing key 6 → simulation reset, LD9 again Green blinking at 1 Hz, high duty cycle and LD5 to LD8 on
- **Battery Status emulation mode left by pushing END → LD5 to LD9 off, LD11 is blinking**

Emulation/Auto mode left by pushing END → LD11 stops blinking

b) Auto demo mode:

Auto mode is entered by pushing F2 and then 4 → Auto demo mode starts.

Auto demo Mode left by pressing the RESET button (close to the P89LV51 µcontroller, in the keypad controller board) → return to the power up default state

4. General Flowchart:

