

Keil μ Vision extension DLL for simulating 7-segment LED displays

ajay_bhargav, Sat Aug 08 2009, 10:31 am

[Keil \$\mu\$ Vision extension DLL for simulating 7-segment LED displays](#)

Enables simulation of multiple 7-segment LED display connected to any port (SFR) on 8051 uC

Picture shows peripheral dialog of 7-seg-LEDs in action.

One or more 7-seg LED displays constitute one or more led-groups. Here, two groups are configured: "Temperature:" and "Pressure:".

Inside each led-group, we can put variable number of separately configurable 7-seg LED displays.

7-seg-LEDs supports time-multiplexing. In this example, it drives five 7-seg LED displays with 13 uC port-pins (8 for segments + 5 for common terminals).

Time-multiplexing support came from way that 7-seg-LEDs samples port-pins $Pi.j$ on which 7-seg LED display pins are connected.

On each write to port-pin $Pi.j$, a new pair values of (pin-states, time) is pushed to cyclic buffer dedicated to hold last N pair values (pin-states, time). From that cyclic buffer, on each dialog update called from μ Vision simulator, the mean-ON-time for each segment is calculated. (dialog update is called from μ Vision simulator on each write to port-pins used by any segment-pin or commonTerminal-pin)

From that mean-ON-time, intensity of onColor for all affected segments are calculated and segments are repainted in real-time.

Link to sample screen-shoot picture

Documentation on "how to use?" can be found in pdf format inside or on Author's webpage

For any doubts you may use forum.