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The technical content of this austriamicrosystems application note is still valid.

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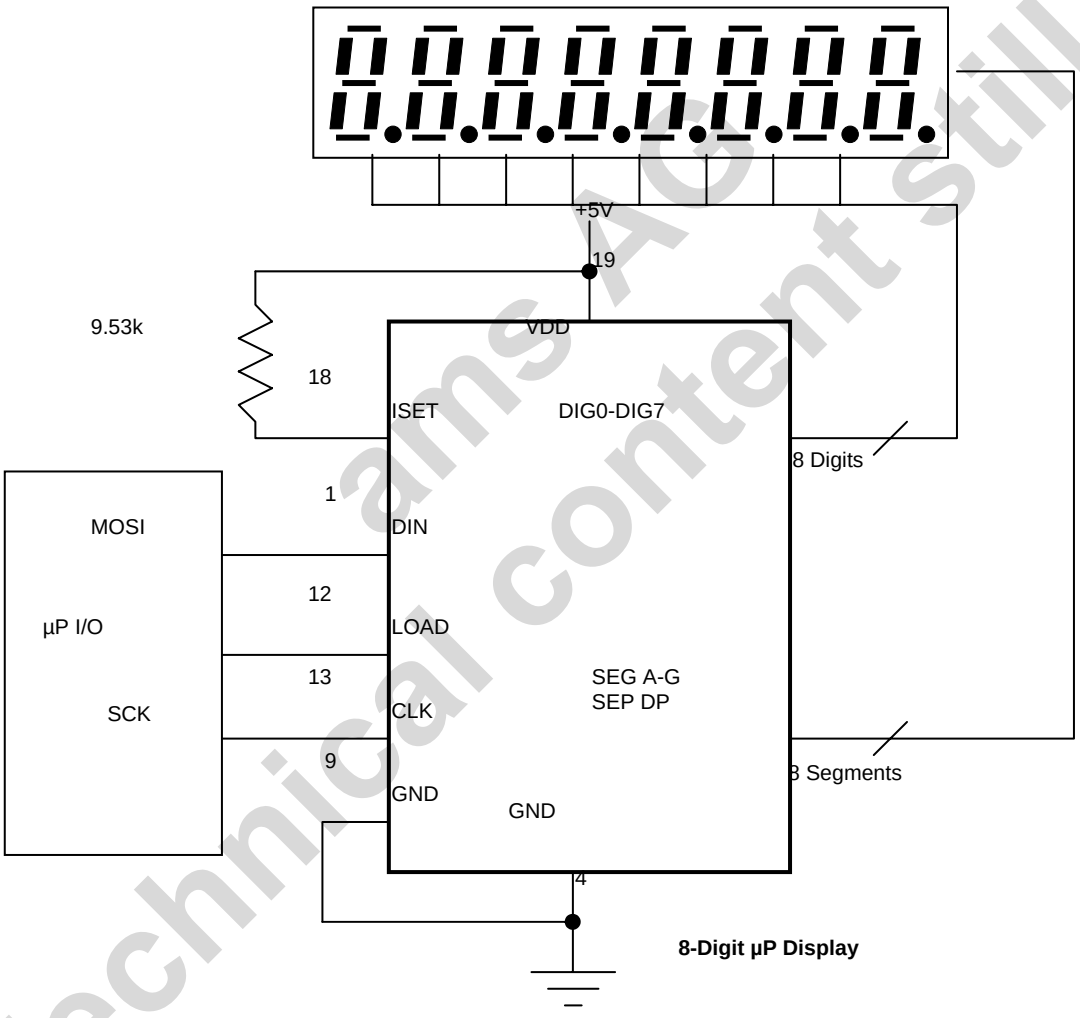
AS1100

Application Note



8-Digit µP Display

General Description

White Goods Application

Systems like washing machines, dishwasher, etc. have front panel full of outputs i.e. small lamps (LEDs), numeric or alphanumeric displays, etc. and inputs i.e. digital matrix keyboards and single keys (D-Key), analog selectors and potentiometers (A-Key) to setup the proper program. This is common to most systems that have a “Front Panel”.

The first way to implement these panel functions is to use a FLAT solution: Slave microprocessor controls a multiplexed Segment-Digit LED display with drivers realized with a number of discrete components (Transistors, Resistors and Capacitors).
The slave microprocessor exchanges the data with the master microprocessor (typically in another board) and controls the I/O for the multiplexed driving and the acquisition of the digital/analog inputs.
This method is not very flexible, quite expensive and consumes a wide area on the printed circuit board. In addition this solution is not advisable due to reliability and other quality issues (due to the number of components).

In order to reduce the number of components the FLAT solution can be replaced by an IMPROVED driving scheme adopting separate integrated drivers for segment and digits.

The AS1100 (or derivatives) from austriamicrosystems AG replaces the typical control structures with just one component which is able to perform all necessary display and communication functions, like:

- Interface to the master microprocessor
- Generation of all timings to control the multiplexed LED display
- Directly drive the segment and digits without the need of any additional external components

The ability to generate all signals needed to control the display and the simple serial interface allow to skip the slave-microprocessor dedicated to the display. This results in an extremely cheap and compact solution.

AS1100 (and derivatives) offers additional advantages in comparison to similar devices:

- Extremely low stand by current
- Software Reset
- Low operating current
- Digital or Analog Brightness control

Application Example

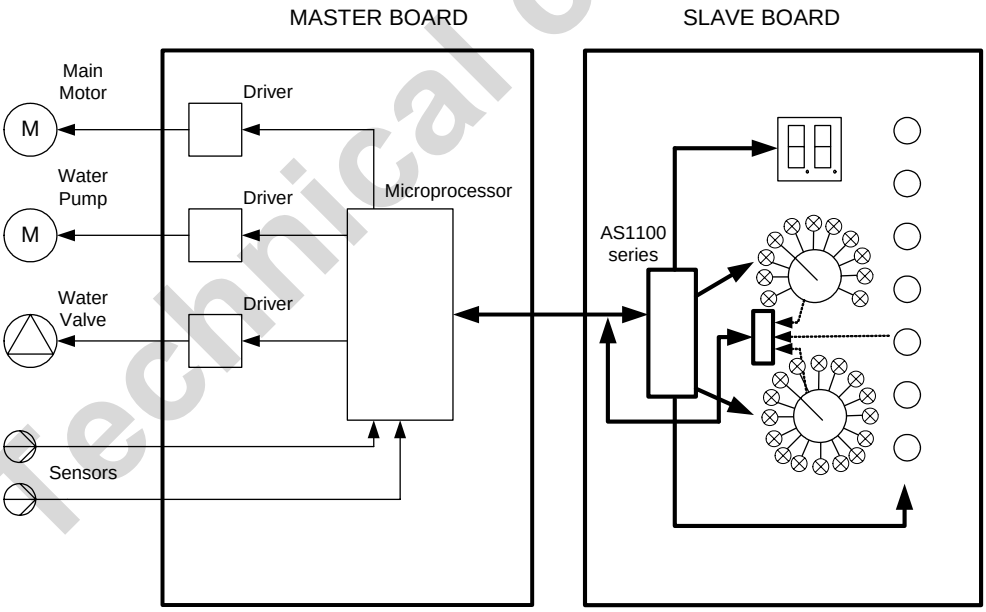


Figure 1: Washing machine example

Lift System Application

Modern lift systems or entry systems have sophisticated panels with displays and keyboards.
They need high level of brightness. Therefore they are quite often realized with LEDs.

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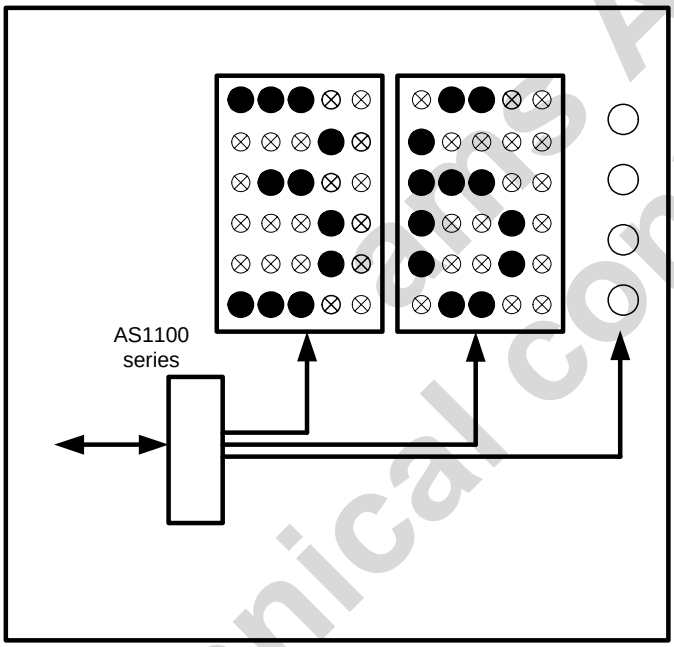

Figure 2: Lift system example

Other Solutions

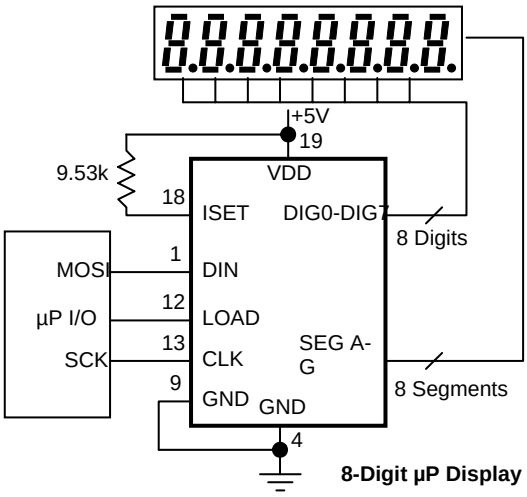

Figure 3: AS1100 Application

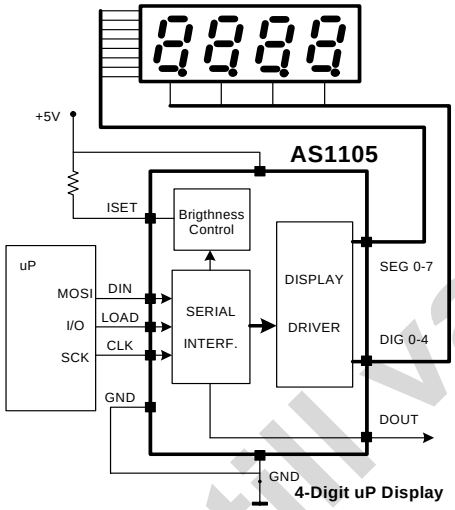

Figure 4: AS1105 Application

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