Remote 8-Bit I/O Expander for Fm+ I²C-Bus with Interrupt and Reset

PCA9672

Last Updated: Mar 18, 2024

The PCA9672 provides general-purpose remote I/O expansion via the two-wire bidirectional I²C#bus (serial clock (SCL), serial data (SDA)).

The devices consist of eight quasi-bidirectional ports, 1 MHz 30 mA drive I²C#bus interface, three hardware address inputs and a reset input operating between 2.3 V and 5.5 V. 1 MHz I²C#bus Fast-mode Plus (Fm+) can support PWM dimming of LEDs and higher I²C#bus drive 30 mA allows more devices to be on the bus without the need for bus buffers. The quasi-bidirectional port can be independently assigned as an input to monitor interrupt status or keypads, or as an output to activate indicator devices such as LEDs. The system controller can read from the input port or write to the output port through a single register.

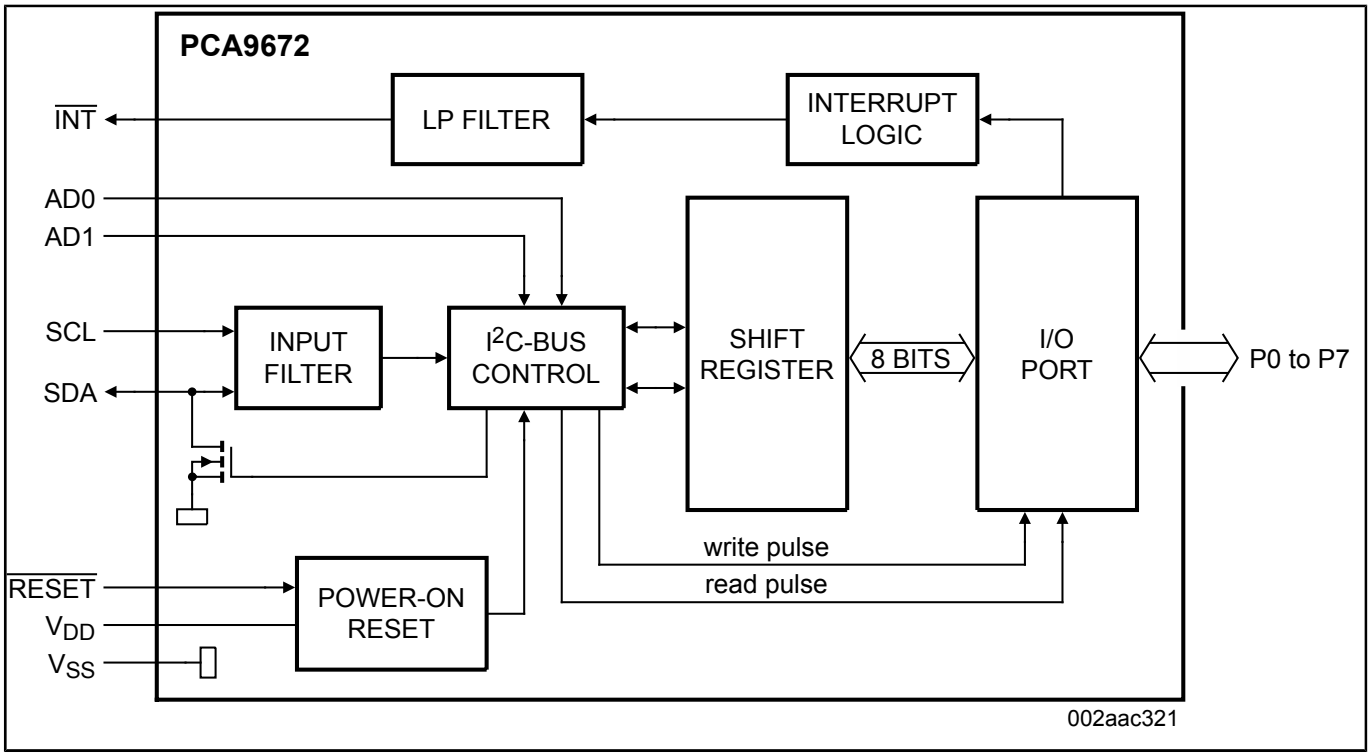
The low current consumption of 2.5 µA (typical, static) is great for mobile applications and the latched output ports have 25 mA high current sink drive capability for directly driving LEDs.

The PCA9672 has two hardware address pins, allowing sixteen of each device to be on the same I²C#bus without the need for bus buffers, so there can be supporting up to 128 I/Os (for example, 128 LEDs).

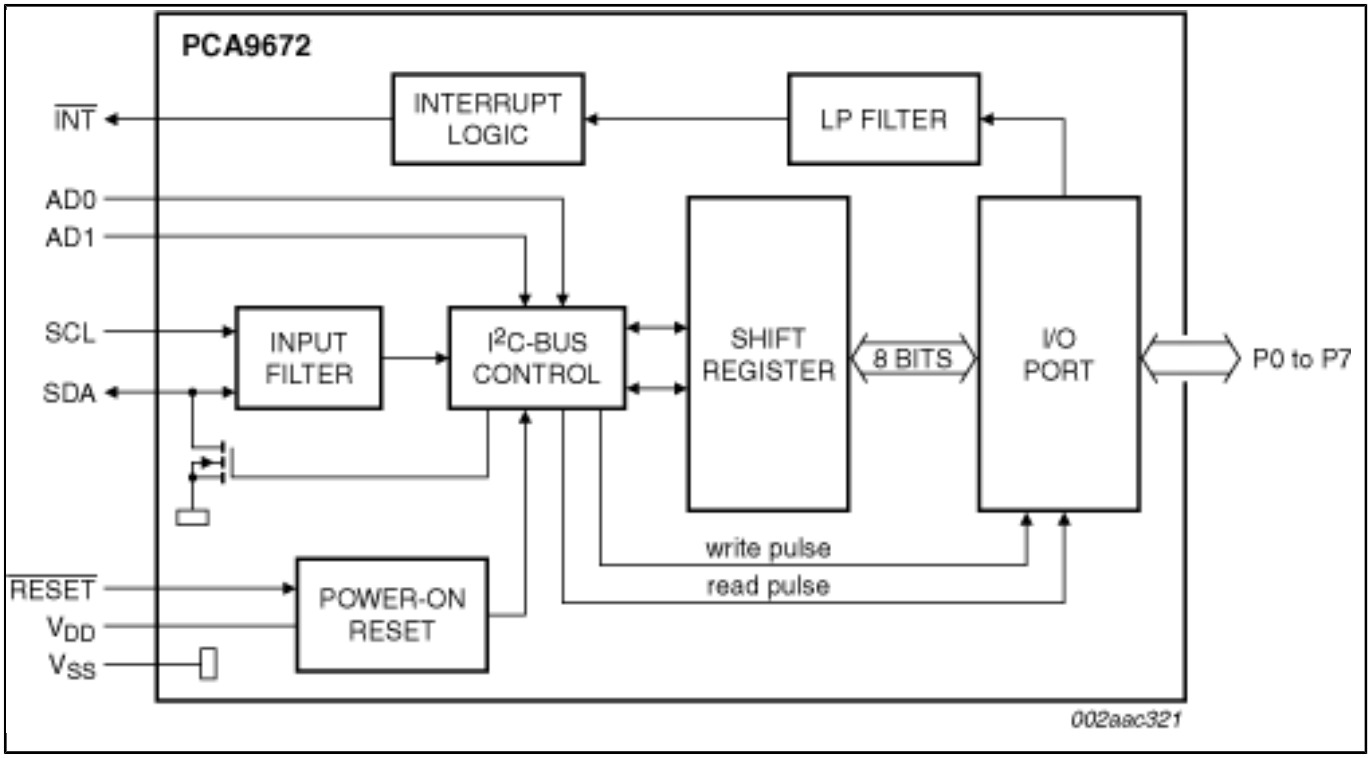
The active LOW open-drain interrupt output (INT) can be connected to the interrupt logic of the microcontroller and is activated when any input state differs from its corresponding input port register state. It is used to indicate to the microcontroller that an input state has changed and the device needs to be interrogated without the microcontroller continuously polling the input register via the I²C#bus.

The internal Power-On Reset (POR) and active LOW hardware reset pin (RESET) initialize the I/Os as inputs with a weak internal pull-up 100 µA current source.

PCA9672 Block Diagram



PCA9672BS, PCA9672D, PCA9672PW Block Diagram



View additional information for Remote 8-Bit I/O Expander for Fm+ I²C-Bus with Interrupt and Reset.

Note: The information on this document is subject to change without notice.