

### Single, Single Pole Double Throw (SPDT) Analog Switch Applications

Protek Devices Analog Products Group has identified a need for a single SPDT analog switch. This application note is to explain how the device can be utilized in various applications.

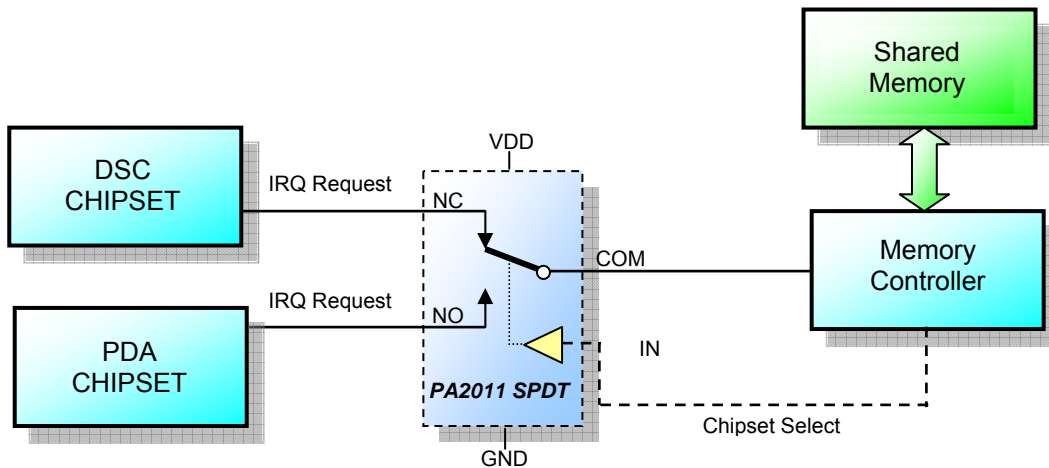
The PA2011 is a low voltage 1.8 to 5.5 Volts, single SPDT analog switch, in a miniature 1.6 x 1.6mm DFN-6 or the standard SC70-6 package. This is a perfect solution where very little PCB real estate is available.

#### **Memory Sharing**

As integration becomes more and more prevalent in the consumer space, two or more functionalities are being combined into single end products.

An example of this is the convergence of the PDA or cell phone with the digital still camera (DSC). Once the added functionality of the DSC is introduced, the core chipset will need to access available memory shared by the PDA or cell phone chipset and will send control signals (not shown in the application circuit below) to the memory controller requesting access.

This simple application summarizes how the digital interrupt request (IRQ) signal can be multiplexed.

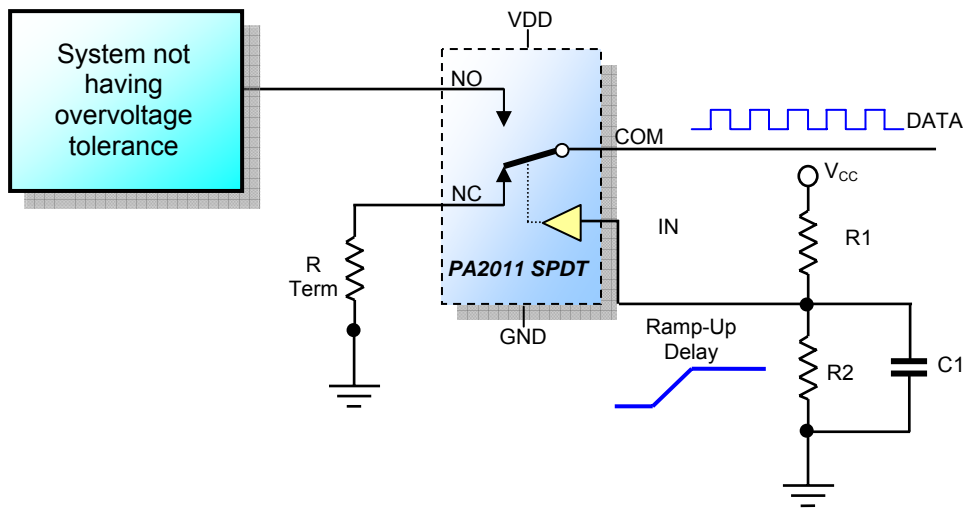


**Power-up, Monitoring.**

Using this circuit idea, a system designer can ensure a component or subsystem power has ramped up before allowing signals to be applied to its input.

This is useful for integrated circuits that do not have over-voltage tolerant inputs. The basic idea uses a resistor divider on the VCC1 power rail, which is ramping up. The RC time constant of the resistor divider further delays the voltage ramp on the select pin of the SPDT bus switch. By carefully selecting values for R1, R2 and C, it is possible to ensure that VCC1 will reach its nominal value before the path from COM to NO is established, thus preventing a signal being present on an I/O before the device/system is powered up.

To ensure the minimum desired delay is achieved, the designer should calculate the time required from a transition from ground (0V) to half the supply voltage ( $V_{CC1}/2$ ).



**Switching of two video channels**

Application is for dual video sources switched into one receiver. Handhelds have multiple sources such as on the TV and MTP associated with MP3 players.

