

### 13.2.5 Digital Input Enable and Sleep Modes

As shown in [Figure 13-2](#), the digital input signal can be clamped to ground at the input of the Schmitt trigger. The signal denoted SLEEP in the figure, is set by the MCU sleep controller in power-down mode, power-save mode, and standby mode to avoid high power consumption if some input signals are left floating, or have an analog signal level close to  $V_{CC}/2$ .

SLEEP is overridden for port pins enabled as external interrupt pins. If the external interrupt request is not enabled, SLEEP is active also for these pins. SLEEP is also overridden by various other alternate functions as described in [Section 13.3 “Alternate Port Functions” on page 63](#).

If a logic high level (“one”) is present on an asynchronous external interrupt pin configured as “interrupt on rising edge, falling edge, or any logic change on pin” while the external interrupt is *not* enabled, the corresponding external interrupt flag will be set when resuming from the above mentioned sleep mode, as the clamping in these sleep mode produces the requested logic change.

### 13.2.6 Unconnected Pins

If some pins are unused, it is recommended to ensure that these pins have a defined level. Even though most of the digital inputs are disabled in the deep sleep modes as described above, floating inputs should be avoided to reduce current consumption in all other modes where the digital inputs are enabled (reset, active mode and idle mode).

The simplest method to ensure a defined level of an unused pin, is to enable the internal pull-up. In this case, the pull-up will be disabled during reset. If low power consumption during reset is important, it is recommended to use an external pull-up or pull-down. Connecting unused pins directly to  $V_{CC}$  or GND is not recommended, since this may cause excessive currents if the pin is accidentally configured as an output.