**Overview of *ButtonXxx* classes (+ *ButtonManager*)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | *Button (base class)* | ButtonAdv | ButtonBas | ButtonEnc | ButtonAna | ButtonEvt |
| ***Attributes*** | | | | | | | | |
| Tag / Name\* / Data (16 bit) | | | 1 | 1 | 1 | 1 | 1 | 1 |
| ***Events*** | | | | | | | | |
| Press/Release | | |  | x | x | x | x | x |
| Long press | | |  | x |  | x |  | x |
| Repeat | | |  | x |  |  |  | x |
| Debounce | | |  | x | x | x |  |  |
| ***Sources*** | | | | | | | | |
| Value retrieved internally | HW Digital input | *check()* | x\* | x | x | x |  |  |
| HW Analog input |  | x | x |  | x |  |
| *Hysteresis on a.input* |  | x |  |  | x |  |
| Source variable | (x)\* | (x) | (x) | (x) | (x) |  |
| Callback | (x)\* | (x) | (x) | (x) | (x) |  |
| Pin no. |  | x\* | x | x | x | x | x\*\* |
| Value supplied externally | Digital | *checkVal(.)* | x\* | x | x | x |  |  |
| Analog | x\* | x | x |  | x |  |
| Digital from input vector | *checkVec(.)* |  | x | x | x |  |  |
| Event flags (*ButtonStatus*) | *process(.)* | x\* | x | x | x | x | x |
| ***Outputs*** | | | | | | | | |
| Mirror variable | | | (x)\* | (x) | (x) | (x) | (x) | (x) |

(x) Optional (compilation switches)

\* (support for derived classes only)

\*\* Pin/index no. only stored as tag (for callback ID), not used for input selection

Description:

* *Button* is a base class only, not instantiable.
* *ButtonAdv* is the **most feature-rich** of the generic buttons (*Adv, Bas, Ana*).
* *ButtonBas* is a version of *ButtonAdv* without its most "expensive" features in terms of memory, for **better price/performance ratio**
* *ButtonEnc* is a slightly simpler version of *ButtonAdv/ButtonBas* but with **digital inputs only** (aimed to encoder buttons)
* *ButtonAna* is a version of *ButtonBas* but tailored for **analog inputs only**
* *ButtonEvt* **does not process actual inputs** (in order to detect events), but it receives a set of events and basically just invokes the corresponding callbacks

An analog input is 'active' between the thresholds (with a settablehysteresis value), 'inactive' otherwise.

Possible enhancements:

* *ButtonEnc: add Debounce; Repeat (options?)*
* *ButtonAna: manage analog value steps as multi-position switches*
* *(Specific "Repeat" callback different from "Press" callback?)*