FLT - Fault inputs

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The FLT block configures and reads the digital fault inputs.

The fault input pin signals are tied to the fault manager and, using the FLT block, they can be configured to generate a “hardware fault” and immediately disable all the PWM outputs (similar to an analog input limit fault or any other fault). They can also be accessed as digital inputs like a GPI.

The FLT pin locations, numbering, and voltage levels are available in the B-Box RCP datasheet and in the B-Board PRO datasheet.

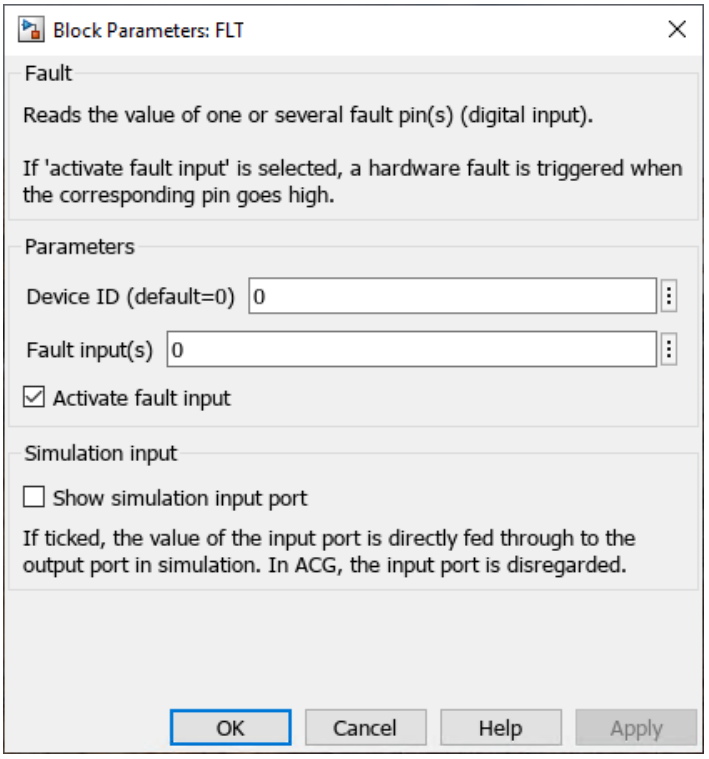
Simulink block

Signal specification

The output signal returns the value of one FLT pin.

Parameters

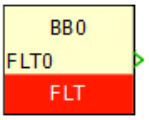
- `Device ID` selects which B-Box/B-Board to address when used in a multi-device configuration.
- `Fault input(s)` (vectorizable) selects the pin(s) to read.
- `Activate fault input` enable the generation of a “hardware fault” if the pin goes high and immediately disable all the PWM outputs.



PLECS block

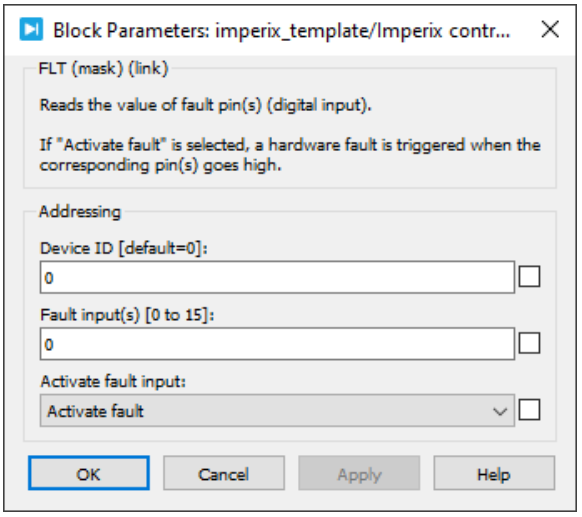
Signal specification

The output signal returns a vector containing the values of the FLT pins. The vector size is defined by the number of FLT pin(s) read which is specified by the parameter `Fault input(s)`.



Parameters

- `Device ID` selects which B-Box/B-Board to address when used in a multi-device configuration.
- `Fault input(s)` (vectorizable) selects the pin(s) to read.
- `Activate fault input` enable the generation of a “hardware fault” if the pin goes high and immediately disable all the PWM outputs.



C++ functions

`Flt_ActivateFaultInput` **— Configure the input as a fault line**

```
void Flt_ActivateFaultInput(tFaultInput input, unsigned int device=0);Code language: C++ (cpp)
```

Enables the generation of a “hardware fault” if the addressed pin goes high.

It has to be called in `UserInit()`.

Parameters

- `input`: the FLT input pin number
- `device`: the id of the addressed device (optional, used in multi-device configuration only)

`Flt_GetBit` **— Get the fault line state**

```
int Flt_GetBit(unsigned int bit, unsigned int device=0);Code language: C++ (cpp)
```

Returns the FLT pin value (0 or 1).

It has to be called during the control interrupt.

Parameters

- `input`: the FLT input pin number
- `device`: the id of the addressed device (optional, used in multi-device configuration only)

`Flt_Get` **— Get all fault line states**

```
int Flt_Get(unsigned int device=0);Code language: C++ (cpp)
```

Returns the values of the fault inputs in the form of a 16-bit value.

It has to be called during the control interrupt.

Parameters

- `device`: the id of the addressed device (optional, used in multi-device configuration only)