

Application Note: AN10070

How to use the select statement with a timeout

This application note is a short how-to on programming/using the xTIMEcomposer tools. It shows how to use the select statement with a timeout.

Required tools and libraries

This application note is based on the following components:

- xTIMEcomposer Tools - Version 14.0.0

Required hardware

Programming how-tos are generally not specific to any particular hardware and can usually run on all XMOS devices. See the contents of the note for full details.

1 How to use the select statement with a timeout

A select statement waits for one of a set of inputs to become ready, performs the selected input and then executes a corresponding body of code. There are however occasions when it is not reasonable to wait on one of the inputs to become ready. In this instance a timer can be used to exit the select statement if no input has become ready within a defined timeout period.

The current time is input from timer `t`. The value of `time` is then extended by the `TIMEOUT_PERIOD` to give a time in the future.

```
t :=> time;
time += TIMEOUT_PERIOD;
```

If data is available from the port before the `TIMEOUT_PERIOD` expires then the `port_input` case is executed and the data can be printed out. However, if no data becomes available within the `TIMEOUT_PERIOD` then the timeout case is executed and the select statement exits with no input received from the port.

```
select {
  case port_input when pinsreq(port_input_data) :=> port_input_data :
    printstr("Input received on port_input : ");
    printintln(port_input_data);
    break;
  case t when timerafter(time) :=> void :
    printstrln("Select statement timeout waiting on input.");
    break;
}
```