

Application Note: AN10050

How to input on multiple ports in parallel

This application note is a short how-to on programming/using the xTIMEcomposer tools. It shows how to input on multiple ports in parallel.

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 input on multiple ports in parallel

By configuring more than one buffered port to be clocked from the same source, a single thread can cause data to be sampled in parallel on these ports.

The statement:

```
sync(in_port_a);
```

causes the processor to wait until the next falling edge on which the last data in the buffer has been sampled for a full period, ensuring that the next instruction is executed just after a falling edge. This ensures that the subsequent two input statements in the loop

```
while(1) {  
    in_port_a :=> in_val_a;  
    in_port_b :=> in_val_b;  
}
```

are both executed in the same clock period.