

Application Note: AN10051

How to output on multiple ports in parallel

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

The statement:

```
sync(out_port_a);
```

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

```
for(char c = 'A'; c <= 'Z'; ++c) {  
    out_port_a <: (char) (c & 0xF0) >> 4;  
    out_port_b <: (char) (c & 0x0F);  
}
```

are both executed in the same clock period.