Application Note: AN10101

How to enable ASCII tracing when running on the simulator

This application note is a short how-to on programming/using the xTIMEcomposer tools. It shows how to enable ASCII tracing when running on the simulator.

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 enable ASCII tracing when running on the simulator

The simulator optionally provides a textual instruction trace.

For example, compile the following code:

```
#include <xs1.h>

port p = XS1_PORT_1A;
int main() {
  int x;
  p :> x;
  return 0;
}
```

When enabled, the input from the port 'p' into variable 'x' will produce the corresponding line in the trace file:

```
tile[0]@0- -A-.----000100cc (main +  8) : in r0(0x0), res[r0(0x10200)] @2127
```

See the xTIMEcomposer User Guide (Tracing Table (see XM-000930-PC)) for further information on the trace format.

2 To enable tracing from within xTIMEcomposer Studio

The ASCII simulator trace can be enabled via:

Run -> Run Configurations -> Simulator -> Trace to console

This will send the trace directly to the console view as the application is running.

Note: If required, the trace can be redirected to a file via:

Run -> Run Configurations -> Simulator -> Trace to file

Alternatively, on completion we can automatically switch to the simulator tracing perspective and load the trace file using:

Run -> Run Configurations -> Simulator -> Open in trace view

3 To enable tracing from the command line

The ASCII simulator trace can be enabled via the *-t* xsim command line option:

```
xsim -t a.xe
```

If tracing of fetch no-ops (FNOPS) is required, it can be enabled via the *–enable-fnop-tracing* xsim command line option:

```
xsim -t --enable-fnop-tracing a.xe
```

This will insert the lines of the following format into the trace at the relevant locations:

```
tile[0]@0 FNOP @2655
```