Application Note: AN10103

How to use the XTA to time a function

This application note is a short how-to on programming/using the xTIMEcomposer tools. It shows how to use the XTA to time a function.

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 XTA to time a function

The XTA can be used to determine the worst and best case timing for a function. Compile the following code:

```
int add1(int x) {
  return x + 1;
}

int main() {
  add1(10);
  return 0;
}
```

Load the resulting binary into the XTA.

In the xTIMEcomposer studio, select the *Analyze* button on the left-hand side navigation toolbar. Next select the *Analyse Timing* perspective via the main toolbar. A binary can be loaded into the XTA then via the *Load Binary into XTA* toolbar button.

From the command line, a binary can be loaded using the following xta command:

```
load a.xe
```

The *add1* function can then be timed as follows:

In the xTIMEcomposer studio, use the 'Select function to analyze' dropdown button in the toolbar to select the 'add1' function. The best and worst case timing for this function will then be displayed in the *Routes* view in the left hand panel.

To time a function using the command line XTA, or from an XTA script/embedded source command, the following can be used:

```
analyze function add1
```