Application Note: AN10061

How to use references

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

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 references

References provide a method of indirectly referrering to some data. For example, the following declarations create a reference x to the integer i:

```
int i = 5;
int &x = i;
```

Reading and writing a reference is the same as reading and writing to the original variable:

```
printf("The value of x is %d\n", x);
x = 7;
printf("x has been updated to %d\n", x);
printf("i has also been updated to %d\n", i);
```

References can also refer to array elements:

```
int a[5] = {1,2,3,4,5};
int &y = a[0];

printf("y has value %d\n", y);
```

Function parameters can also be references. For example, the following function takes a reference and updates the value it refers to:

```
void f(int &x) {
  x = x + 1;
}
```

This function can be called with the value to refer to as an argument:

```
void pass_by_reference_example() {
  int i = 5;
  printf("Value of i is %d\n", i);
  f(i);
  printf("Value of i is %d\n", i);
}
```

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