

Application Note: AN10004

# How to pass the array bound as a parameter

This application note is a short how-to on programming/using the xTIMEcomposer tools. It shows how to pass the array bound as a parameter.

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## 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 pass the array bound as a parameter

You can pass the safe array bound used for checking as a parameter. For example:

```
int sum(int a[n], unsigned n)
{
    int x = 0;
    for (int i = 0; i < n; i++) {
        x += a[i];
    }
    return x;
}
```

This method allows the compiler to reason about the checks and eliminate them at compile time. For example, in the code above it can know that none of the array reads are out of bounds since it knows that `n` is the number of elements in the array and the loop only goes up to `n`.

Nothing special is required when calling these functions. The arguments can be passed as normal:

```
int a[5] = {0, 1, 2, 3, 4};
printf("Sum of array is %d\n", sum(a, 5));
```