How to use array bounds checks

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

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 array bounds checks

Arrays are *safe* by default and are represented by their base pointer and a number of elements:

base pointer	number of elements

These bounds allow array accesses to be checked at the point of access.

You do not need to do anything special to use the bound checks. Any declared array has them.

```
int x[10];
```

If this array is accessed outside its bounds, it will cause an exception. This is true even via function calls.

```
int f(int y[]) {
  // This will cause an exception if the array 'x' of only 10 elements is
  // passed to it
  return y[11];
}
```

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