How to use labels in inline assembly

version 1.1.0

scope Example. This code is provided as example code for a user to base

their code on.

description How to use labels in inline assembly

boards Unless otherwise specified, this example runs on the SliceKIT Core

Board, but can easily be run on any XMOS device by using a different

XN file.

It invalid to write inline assembly code that branches to another inline assembly statement. However it is sometimes useful to write inline assembly that branches within the instructions contained in that asm statement.

A common mistake is to write the following:

```
asm(
"bt %1, .Lfoo\n"
"mov %0, %2\n"
"bu .Ldone\n"
".Lfoo:\n"
"mov %0, %3\n"
".Ldone:\n"
: "=r"(a)
: "r"(b), "r"(c));
```

If the statement containing the asm statement is duplicated (e.g. due to function inlining or loop unrolling) this will result in an error due to the labels .Lfoo and .Ldone being defined multiple times.

Instead you should write:

```
asm(
"bt %1, .Lfoo%=\n"
"mov %0, %2\n"
"bu .Ldone%=\n"
".Lfoo%=:\n"
"mov %0, %3\n"
".Ldone%=:\n"
: "=r"(a)
: "r"(b), "r"(c), "r"(d));
```

The %= escape sequence emits a number that is unique to each expansion of the asm statement, making the labels unique.

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