

Name	Functions (and banked registers)
R0	General-purpose register
R1	General-purpose register
R2	General-purpose register
R3	General-purpose register
R4	General-purpose register
R5	General-purpose register
R6	General-purpose register
R7	General-purpose register
R8	General-purpose register
R9	General-purpose register
R10	General-purpose register
R11	General-purpose register
R12	General-purpose register
R13 (MSP)	Main Stack Pointer (MSP), Process Stack Pointer (PSP)
R13 (PSP)	
R14	Link Register (LR)
R15	Program Counter (PC)

Low registers: R0-R7
High registers: R8-R12

FIGURE 2.2

Registers in the Cortex-M3.

2.2.3 R14: The Link Register

When a subroutine is called, the return address is stored in the link register.

2.2.4 R15: The Program Counter

The program counter is the current program address. This register can be written to control the program flow.

2.2.5 Special Registers

The Cortex-M3 processor also has a number of special registers (see [Figure 2.3](#)). They are as follows:

- Program Status registers (PSRs)
- Interrupt Mask registers (PRIMASK, FAULTMASK, and BASEPRI)
- Control register (CONTROL)

These registers have special functions and can be accessed only by special instructions. They cannot be used for normal data processing (see [Table 2.1](#)).