Bit Banding:

When implementing applications for embedded systems, there is often a need to clear and set individual bits within peripheral and SRAM registers. For instance, to check when an A/D conversion is complete, it is necessary to check the status flag for completion, obtain the value, and then reset the flag to obtain a new conversion.

The bitwise AND and OR masks are needed to check, set and clear the flags. The Cortex-M processors provide a more efficient implementation to perform these frequent actions, known as Bit Banding.

Bit Banding is a technique which allows individual bits in the SRAM and peripheral registers to be read or written to, as opposed to reading a whole register and making the desired bits. These registers are bit addressable.

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| --- | --- |
| 0x43FFFFFF  0x42000000 | 32 MB Bit band alias |
| 0x41FFFFFF  0x40100000 | 31 MB |
| 0x40000000 | 1 MB Bit band region |
|  |  |
| 0x23FFFFFF  0x22000000 | 32 MB Bit band alias |
| 0x21FFFFFF  0x20100000 | 31 MB |
| 0x20000000 | 1 MB Bit band region |