

## 4 General bootloader description

### 4.1 Bootloader activation

The bootloader is activated by applying one of the patterns described in [Table 2](#).

If Boot from Bank2 option is activated (for products supporting this feature), bootloader executes Dual Boot mechanism as described in figures “Dual bank boot implementation for STM32xxxx” where STM32xxxx is the relative STM32 product (example: [Figure 40](#)), otherwise bootloader selection protocol is executed as described in figures “Bootloader VY.x selection for STM32xxxx” where STM32xxxx is the relative STM32 product (example: [Figure 21](#)).

When readout protection Level2 is activated, STM32 does not boot on system memory in any case and bootloader cannot be executed (unless jumping to it from Flash user code, all commands are not accessible except Get, GetID, and GetVersion).

**Table 2. Bootloader activation patterns**

Pattern	Condition
Pattern 1	Boot0(pin) = 1 and Boot1(pin) = 0
Pattern 2	Boot0(pin) = 1 and nBoot1(bit) = 1
Pattern 3	Boot0(pin) = 1, Boot1(pin) = 0 and BFB2(bit) = 1
	Boot0(pin) = 0, BFB2(bit) = 0 and both banks do not contain valid code
	Boot0(pin) = 1, Boot1(pin) = 0, BFB2(bit) = 0 and both banks do not contain valid code
Pattern 4	Boot0(pin) = 1, Boot1(pin) = 0 and BFB2(bit) = 1
	Boot0(pin) = 0, BFB2(bit) = 0 and both banks do not contain valid code
	Boot0(pin) = 1, Boot1(pin) = 0 and BFB2(bit) = 0
Pattern 5	Boot0(pin) = 1, Boot1(pin) = 0 and BFB2(bit) = 0
	Boot0(pin) = 0, BFB2(bit) = 1 and both banks do not contain valid code
	Boot0(pin) = 1, Boot1(pin) = 0 and BFB2 (bit) = 1
Pattern 6	Boot0(pin) = 1, nBoot1(bit) = 1 and nBoot0_SW(bit) = 1
	nBoot0(bit) = 0, nBoot1(bit) = 1 and nBoot0_SW(bit) = 0
	Boot0(pin) = 0, nBoot0_SW(bit) = 1 and main Flash memory empty
	nBoot0(bit) = 1, nBoot0_SW(bit)=0 and main Flash memory empty
Pattern 7	Boot0(pin) = 1, nBoot1(bit) = 1 and BFB2(bit) = 0
	Boot0(pin) = 0, BFB2(bit) = 1 and both banks do not contain valid code
	Boot0(pin) = 1, nBoot1(bit) = 1 and BFB2(bit) = 1
Pattern 8	Boot(pin) = 0 and BOOT_ADD0(optionbyte) = 0x0040
	Boot(pin) = 1 and BOOT_ADD1(optionbyte) = 0x0040