## 4 Memory mapping

The memory map is shown in Figure 18.

0xE010 0000 - 0xFFFF FFFF 0xE000 0000 - 0xE00F FFFF 0xA000 1000 - 0xDFFF FFFF 0xA000 0FFF AHB3 0x6000 0000 0x5006 0C00 - 0x5FFF FFFF 0x5006 0BFF AHB2 0xFFFF FFFF 512-Mbyte block 7 0x5000 0000 0x4008 0000 - 0x4FFF FFFF 0x4007 FFFF Cortex-M4's Reserved internal 0xE000 0000 eripherals 0xDFFF FFFF 512-Mbyte block 6 Not used 0xC000 0000 0xBFFF FFFF AHB1 512-Mbyte block 5 SMC registers 0xA000 0000 0x9FFF FFFF 512-Mbyte 0x4002 000 block 4 FSMC bank 3 0x4001 5800 - 0x4001 FFFF Reserved 0x4001 57FF & bank4 0x8000 0000 0x7FFF FFFF 512-Mbyte block 3 FSMC bank1 & bank2 0x6000 0000 0x5FFF FFFF 512-Mbyte APB2 block 2 Peripherals 0x4000 0000 0x3FFF FFFF 512-Mbyte block 1 SRAM Reserved 0x2002 0000 - 0x3FFF FFFF 0x4001 0000 0x2000 0000 0x1FFF FFFF SRAM (16 KB aliased by bit-banding) Reserved 0x4000 7800 - 0x4000 FFFF 0x2001 C000 - 0x2001 FFFF 0x4000 7FFF 512-Mbyte SRAM (112 KB aliased by bit-banding) block 0 0x2000 0000 - 0x2001 BFFF Code 0x0000 0000 Reserved 0x1FFF C008 - 0x1FFF FFFF

0x1FFF C000 - 0x1FFF C007 0x1FFF 7A10 - 0x1FFF 7FFF

0x1FFF 0000 - 0x1FFF 7A0F

0x1001 0000 - 0x1FFE FFFF

0x1000 0000 - 0x1000 FFFF

0x0810 0000 - 0x0FFF FFFF

0x0800 0000 - 0x080F FFFF

0x0010 0000 - 0x07FF FFFF

APB1

Figure 18. STM32F41xxx memory map



ai18513f

0x4000 0000

Option Bytes

System memory + OTP

Reserved

CCM data RAM

(64 KB data SRAM)

Reserved Flash

Reserved

Aliased to Flash, system memory or SRAM depending on the BOOT pins

Reserved

Table 10. STM32F41x register boundary addresses

Bus	Boundary address	Peripheral
	0xE00F FFFF - 0xFFFF FFFF	Reserved
Cortex-M4	0xE000 0000 - 0xE00F FFFF	Cortex-M4 internal peripherals
	0xA000 1000 - 0xDFFF FFFF	Reserved
	0xA000 0000 - 0xA000 0FFF	FSMC control register
	0x9000 0000 - 0x9FFF FFFF	FSMC bank 4
AHB3	0x8000 0000 - 0x8FFF FFFF	FSMC bank 3
	0x7000 0000 - 0x7FFF FFFF	FSMC bank 2
	0x6000 0000 - 0x6FFF FFFF	FSMC bank 1
	0x5006 0C00- 0x5FFF FFFF	Reserved
	0x5006 0800 - 0x5006 0BFF	RNG
	0x5006 0400 - 0x5006 07FF	HASH
	0x5006 0000 - 0x5006 03FF	CRYP
AHB2	0x5005 0400 - 0x5005 FFFF	Reserved
	0x5005 0000 - 0x5005 03FF	DCMI
	0x5004 0000- 0x5004 FFFF	Reserved
	0x5000 0000 - 0x5003 FFFF	USB OTG FS
	0x4008 0000- 0x4FFF FFFF	Reserved

Table 10. STM32F41x register boundary addresses (continued)

Bus	Boundary address	Peripheral
	0x4004 0000 - 0x4007 FFFF	USB OTG HS
	0x4002 9400 - 0x4003 FFFF	Reserved
	0x4002 9000 - 0x4002 93FF	
	0x4002 8C00 - 0x4002 8FFF	
	0x4002 8800 - 0x4002 8BFF	ETHERNET MAC
	0x4002 8400 - 0x4002 87FF	
	0x4002 8000 - 0x4002 83FF	
	0x4002 6800 - 0x4002 7FFF	Reserved
	0x4002 6400 - 0x4002 67FF	DMA2
	0x4002 6000 - 0x4002 63FF	DMA1
	0x4002 5000 - 0x4002 5FFF	Reserved
	0x4002 4000 - 0x4002 4FFF	BKPSRAM
AHB1	0x4002 3C00 - 0x4002 3FFF	Flash interface register
AUDI	0x4002 3800 - 0x4002 3BFF	RCC
	0x4002 3400 - 0x4002 37FF	Reserved
	0x4002 3000 - 0x4002 33FF	CRC
	0x4002 2400 - 0x4002 2FFF	Reserved
	0x4002 2000 - 0x4002 23FF	GPIOI
	0x4002 1C00 - 0x4002 1FFF	GPIOH
	0x4002 1800 - 0x4002 1BFF	GPIOG
	0x4002 1400 - 0x4002 17FF	GPIOF
	0x4002 1000 - 0x4002 13FF	GPIOE
	0x4002 0C00 - 0x4002 0FFF	GPIOD
	0x4002 0800 - 0x4002 0BFF	GPIOC
	0x4002 0400 - 0x4002 07FF	GPIOB
	0x4002 0000 - 0x4002 03FF	GPIOA
	0x4001 5800- 0x4001 FFFF	Reserved

Table 10. STM32F41x register boundary addresses (continued)

Bus	Boundary address	Peripheral
	0x4001 4C00 - 0x4001 57FF	Reserved
	0x4001 4800 - 0x4001 4BFF	TIM11
	0x4001 4400 - 0x4001 47FF	TIM10
	0x4001 4000 - 0x4001 43FF	TIM9
	0x4001 3C00 - 0x4001 3FFF	EXTI
	0x4001 3800 - 0x4001 3BFF	SYSCFG
	0x4001 3400 - 0x4001 37FF	Reserved
	0x4001 3000 - 0x4001 33FF	SPI1
APB2	0x4001 2C00 - 0x4001 2FFF	SDIO
	0x4001 2400 - 0x4001 2BFF	Reserved
	0x4001 2000 - 0x4001 23FF	ADC1 - ADC2 - ADC3
	0x4001 1800 - 0x4001 1FFF	Reserved
	0x4001 1400 - 0x4001 17FF	USART6
	0x4001 1000 - 0x4001 13FF	USART1
	0x4001 0800 - 0x4001 0FFF	Reserved
	0x4001 0400 - 0x4001 07FF	TIM8
	0x4001 0000 - 0x4001 03FF	TIM1
	0x4000 7800- 0x4000 FFFF	Reserved

Table 10. STM32F41x register boundary addresses (continued)

Bus	Boundary address	Peripheral
	0x4000 7800 - 0x4000 7FFF	Reserved
	0x4000 7400 - 0x4000 77FF	DAC
	0x4000 7000 - 0x4000 73FF	PWR
	0x4000 6C00 - 0x4000 6FFF	Reserved
	0x4000 6800 - 0x4000 6BFF	CAN2
	0x4000 6400 - 0x4000 67FF	CAN1
	0x4000 6000 - 0x4000 63FF	Reserved
	0x4000 5C00 - 0x4000 5FFF	I2C3
	0x4000 5800 - 0x4000 5BFF	I2C2
	0x4000 5400 - 0x4000 57FF	I2C1
	0x4000 5000 - 0x4000 53FF	UART5
	0x4000 4C00 - 0x4000 4FFF	UART4
	0x4000 4800 - 0x4000 4BFF	USART3
	0x4000 4400 - 0x4000 47FF	USART2
	0x4000 4000 - 0x4000 43FF	I2S3ext
APB1	0x4000 3C00 - 0x4000 3FFF	SPI3 / I2S3
	0x4000 3800 - 0x4000 3BFF	SPI2 / I2S2
	0x4000 3400 - 0x4000 37FF	I2S2ext
	0x4000 3000 - 0x4000 33FF	IWDG
	0x4000 2C00 - 0x4000 2FFF	WWDG
	0x4000 2800 - 0x4000 2BFF	RTC & BKP Registers
	0x4000 2400 - 0x4000 27FF	Reserved
	0x4000 2000 - 0x4000 23FF	TIM14
	0x4000 1C00 - 0x4000 1FFF	TIM13
	0x4000 1800 - 0x4000 1BFF	TIM12
	0x4000 1400 - 0x4000 17FF	TIM7
	0x4000 1000 - 0x4000 13FF	TIM6
	0x4000 0C00 - 0x4000 0FFF	TIM5
	0x4000 0800 - 0x4000 0BFF	TIM4
	0x4000 0400 - 0x4000 07FF	TIM3
	0x4000 0000 - 0x4000 03FF	TIM2