1. Description

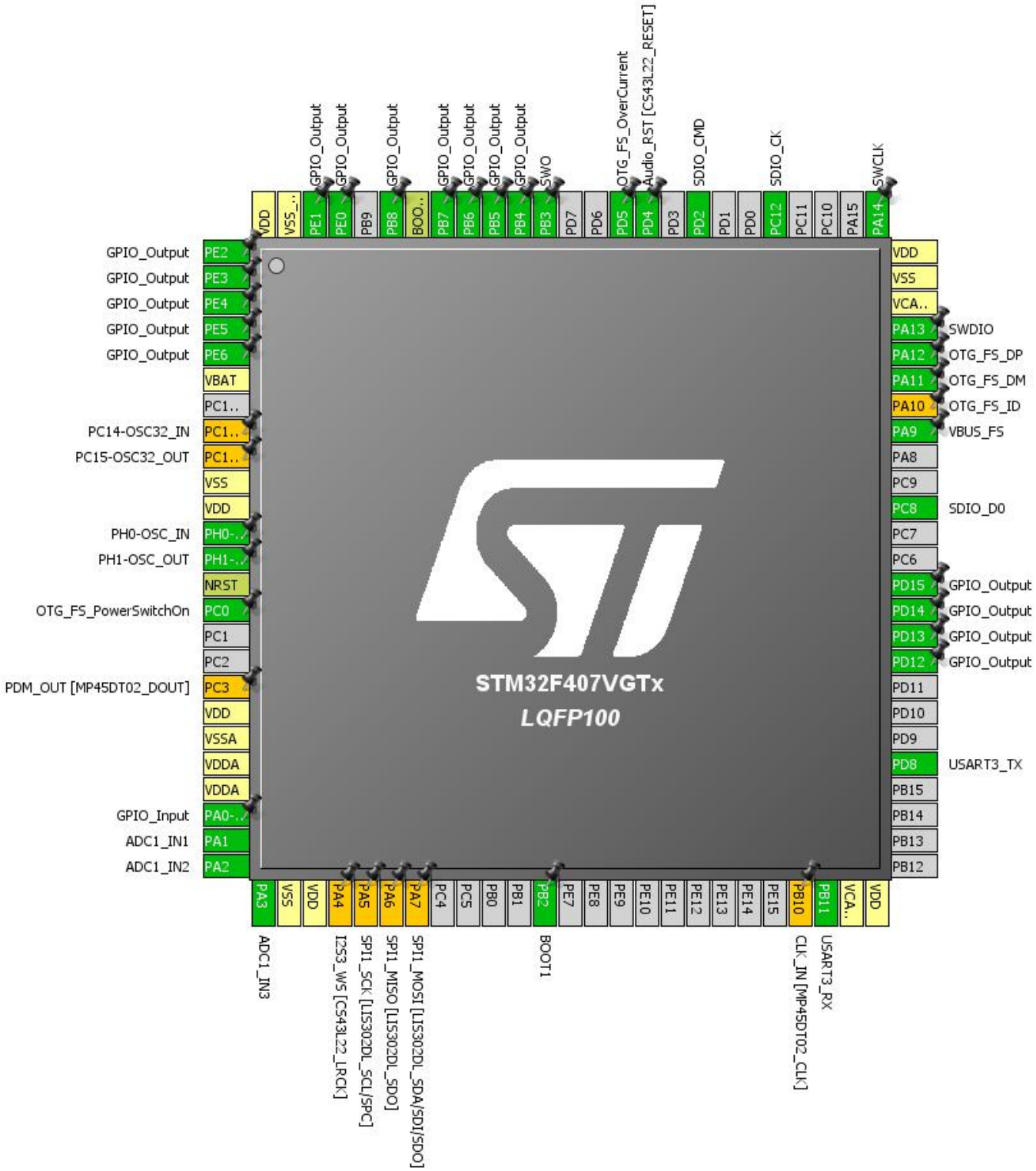
1.1. Project

Project Name	MySniperLocator
Board Name	No information
Generated with:	STM32CubeMX 4.9.0
Date	09/25/2015

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F407VGTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration



3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2 *	I/O	GPIO_Output	
2	PE3 *	I/O	GPIO_Output	
3	PE4 *	I/O	GPIO_Output	
4	PE5 *	I/O	GPIO_Output	
5	PE6 *	I/O	GPIO_Output	
6	VBAT	Power		
8	PC14-OSC32_IN **	I/O	RCC_OSC32_IN	PC14-OSC32_IN
9	PC15-OSC32_OUT **	I/O	RCC_OSC32_OUT	PC15-OSC32_OUT
10	VSS	Power		
11	VDD	Power		
12	PH0-OSC_IN	I/O	RCC_OSC_IN	PH0-OSC_IN
13	PH1-OSC_OUT	I/O	RCC_OSC_OUT	PH1-OSC_OUT
14	NRST	Reset		
15	PC0 *	I/O	GPIO_Output	OTG_FS_PowerSwitchOn
18	PC3 **	I/O	I2S2_SD	PDM_OUT [MP45DT02_DOUT]
19	VDD	Power		
20	VSSA	Power		
21	VDDA	Power		
22	VDDA	Power		
23	PA0-WKUP *	I/O	GPIO_Input	
24	PA1	I/O	ADC1_IN1	
25	PA2	I/O	ADC1_IN2	
26	PA3	I/O	ADC1_IN3	
27	VSS	Power		
28	VDD	Power		
29	PA4 **	I/O	I2S3_WS	I2S3_WS [CS43L22_LRCK]
30	PA5 **	I/O	SPI1_SCK	SPI1_SCK [LIS302DL_SCL/SPC]
31	PA6 **	I/O	SPI1_MISO	SPI1_MISO [LIS302DL_SDO]
32	PA7 **	I/O	SPI1_MOSI	SPI1_MOSI [LIS302DL_SDA/SDI/SDO]
37	PB2 *	I/O	GPIO_Input	BOOT1
47	PB10 **	I/O	I2S2_CK	CLK_IN [MP45DT02_CLK]
48	PB11	I/O	USART3_RX	

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
49	VCAP_1	Power		
50	VDD	Power		
55	PD8	I/O	USART3_TX	
59	PD12 *	I/O	GPIO_Output	
60	PD13 *	I/O	GPIO_Output	
61	PD14 *	I/O	GPIO_Output	
62	PD15 *	I/O	GPIO_Output	
65	PC8	I/O	SDIO_D0	
68	PA9	I/O	USB_OTG_FS_VBUS	VBUS_FS
69	PA10 **	I/O	USB_OTG_FS_ID	OTG_FS_ID
70	PA11	I/O	USB_OTG_FS_DM	OTG_FS_DM
71	PA12	I/O	USB_OTG_FS_DP	OTG_FS_DP
72	PA13	I/O	SYS_JTMS-SWDIO	SWDIO
73	VCAP_2	Power		
74	VSS	Power		
75	VDD	Power		
76	PA14	I/O	SYS_JTCK-SWCLK	SWCLK
80	PC12	I/O	SDIO_CK	
83	PD2	I/O	SDIO_CMD	
85	PD4 *	I/O	GPIO_Output	Audio_RST [CS43L22_RESET]
86	PD5 *	I/O	GPIO_Input	OTG_FS_OverCurrent
89	PB3	I/O	SYS_JTDO-SWO	SWO
90	PB4 *	I/O	GPIO_Output	
91	PB5 *	I/O	GPIO_Output	
92	PB6 *	I/O	GPIO_Output	
93	PB7 *	I/O	GPIO_Output	
94	BOOT0	Boot		
95	PB8 *	I/O	GPIO_Output	
97	PE0 *	I/O	GPIO_Output	
98	PE1 *	I/O	GPIO_Output	
99	VSS_SA	Power		
100	VDD	Power		

* The pin is affected with an I/O function

** The pin is affected with a peripheral function but no peripheral mode is activated

4. IPs and Middleware Configuration

4.1. ADC1

mode: IN1

mode: IN2

mode: IN3

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	**PCLK2 divided by 8 ***
Resolution	12 bits (15 ADC Clock cycles)
Data Alignment	Right alignment
Scan Conversion Mode	**Enabled ***
Continuous Conversion Mode	**Enabled ***
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	**Enabled ***
End Of Conversion Selection	EOC flag at the end of single channel conversion

ADCgroup:

Number Of Conversion	**3 ***
External Trigger Conversion Edge	None
Number Of Conversions	0
Number Of Conversion	**3 ***
External Trigger Conversion Edge	None
Number Of Conversion	**3 ***
External Trigger Conversion Edge	None
Number Of Conversion	**3 ***
External Trigger Conversion Edge	None

WatchDog:

Enable Analog WatchDog Mode	false

ADC_Regular_ConversionMode:

Rank	**3 ***
Channel	**Channel 3 ***
Sampling Time	**56 Cycles ***
Rank	**2 ***
Channel	**Channel 2 ***

Sampling Time	**56 Cycles ***
Rank	1
Channel	**Channel 1 ***
Sampling Time	**56 Cycles ***

4.2. IWDG

mode: Activated

Clocking:

IWDG counter clock prescaler	**32 ***
IWDG down-counter reload value	**128 ***

4.3. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	5 WS (6 CPU cycle)

RCC Parameters:

HSI Calibration Value	16

Power Parameters:

Power Regulatror Voltage Scale	Power Regulator Voltage Scale 1

4.4. RTC

Alarm A: Internal Alarm

General:

Hour Format	Hourformat 24
Asynchronous Predivider value	127
Synchronous Predivider value	255

Calendar Time:

Data Format	**Binary data format ***
Day Light Saving: value of hour adjustment	Daylightsaving None

Store Operation	Storeoperation Reset

Alarm A:

Alarm Mask	Alarm Mask None
Alarm Sub Second Mask	All Alarm SS fields are masked.
Alarm Date Week Day Sel	Date
Alarm Date	1

4.5. SDIO

Mode: SD 1 bit

SDIO parameters:

SDIOCLK clock divide factor	0

4.6. SYS

Debug: SWD and Asynchronous Trace

4.7. USART3

Mode: Asynchronous

Basic Parameters:

Baud Rate	**9600 ***
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

4.8. USB_OTG_FS

Mode: Device_Only

mode: Activate_VBUS

Speed	Device Full Speed 12MBit/s
Endpoint 0 Max Packet size	64 Bytes
Low power	Disabled
Link Power Management	Disabled

VBUS sensing	Enabled

4.9. FATFS

mode: SD Card

Version:

FATFS version	R0.10b

Function Parameters:

FS_TINY (Tiny mode)	Disabled
FS_READONLY (Read-only mode)	Disabled
FS_MINIMIZE (Minimization level)	Disabled
USE_STRFUNC (String functions)	Enabled with LF -> CRLF conversion
USE_MKFS (Make filesystem function)	Enabled
USE_FORWARD (Forward function)	Disabled
USE_LABEL (Volume label functions)	**Enabled ***
USE_FASTSEEK (Fast seek function)	Enabled

Locale and Namespace Parameters:

CODE_PAGE (Code page on target)	Latin 1 (Windows)
USE_LFN (Use Long Filename)	Enabled with dynamic working buffer on the HEAP
MAX_LFN (Max Long Filename)	255
LFN_UNICODE (Enable Unicode)	ANSI/OEM
STRF_ENCODE (Character encoding)	UTF-8
FS_RPATH (Relative Path)	Disabled

Physical Drive Parameters:

VOLUMES (Logical drives)	1
MAX_SS (Maximum Sector Size)	512
MIN_SS (Minimum Sector Size)	512
MULTI_PARTITION (Volume partitions feature)	Disabled
USE_ERASE (Erase feature)	Disabled
FS_NOFSINFO (Force full FAT scan)	0

System Parameters:

WORD_ACCESS (Platform dependent access option)	Byte access
FS_REENTRANT (Re-Entrancy)	Disabled
FS_TIMEOUT (Timeout ticks)	1000
SYNC_t (O/S sync object)	osSemaphoreId
FS_LOCK (Number of files opened simultaneously)	2

SDIO:

SDIO instance	SDIO1

*** User modified value**

5. System Configuration

5.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PA1	ADC1_IN1	Analog mode	No pull-up and no pull-down	n/a	
	PA2	ADC1_IN2	Analog mode	No pull-up and no pull-down	n/a	
	PA3	ADC1_IN3	Analog mode	No pull-up and no pull-down	n/a	
RCC	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	PH0-OSC_IN
	PH1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	PH1-OSC_OUT
SDIO	PC8	SDIO_D0	Alternate Function Push Pull	No pull-up and no pull-down	High	
	PC12	SDIO_CK	Alternate Function Push Pull	No pull-up and no pull-down	High	
	PD2	SDIO_CMD	Alternate Function Push Pull	No pull-up and no pull-down	High	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	SWDIO
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	SWCLK
	PB3	SYS_JTDO-SWO	n/a	n/a	n/a	SWO
USART3	PB11	USART3_RX	Alternate Function Push Pull	Pull-up	**High ***	
	PD8	USART3_TX	Alternate Function Push Pull	Pull-up	**High ***	
USB_OTG_FS	PA9	USB_OTG_FS_VBUS	Input mode	No pull-up and no pull-down	n/a	VBUS_FS
	PA11	USB_OTG_FS_DM	Alternate Function Push Pull	No pull-up and no pull-down	Low	OTG_FS_DM
	PA12	USB_OTG_FS_DP	Alternate Function Push Pull	No pull-up and no pull-down	Low	OTG_FS_DP
Single Mapped Signals	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	PC14-OSC32_IN
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	PC15-OSC32_OUT
	PC3	I2S2_SD	Alternate Function Push Pull	No pull-up and no pull-down	Low	PDM_OUT [MP45DT02_DOUT]
	PA4	I2S3_WS	Alternate Function Push Pull	No pull-up and no pull-down	Low	I2S3_WS [CS43L22_LRCK]
	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	Low	SPI1_SCK [LIS302DL_SCL/SPC]
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	Low	SPI1_MISO [LIS302DL_SDO]

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	Low	SPI1_MOSI [LIS302DL_SDA/SDI/SDO]
	PB10	I2S2_CK	Alternate Function Push Pull	No pull-up and no pull-down	Low	CLK_IN [MP45DT02_CLK]
	PA10	USB_OTG_FS_ID	Alternate Function Push Pull	No pull-up and no pull-down	Low	OTG_FS_ID
GPIO	PE2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PC0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	OTG_FS_PowerSwitchOn
	PA0-WKUP	GPIO_Input	Input mode	**Pull-down ***	n/a	
	PB2	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	BOOT1
	PD12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PD13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PD14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PD15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PD4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Audio_RST [CS43L22_RESET]
	PD5	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	OTG_FS_OverCurrent
	PB4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

5.2. DMA configuration

DMA request	Stream	Direction	Priority
ADC1	DMA2_Stream0	Peripheral To Memory	**High ***

ADC1: DMA2_Stream0 DMA request Settings:

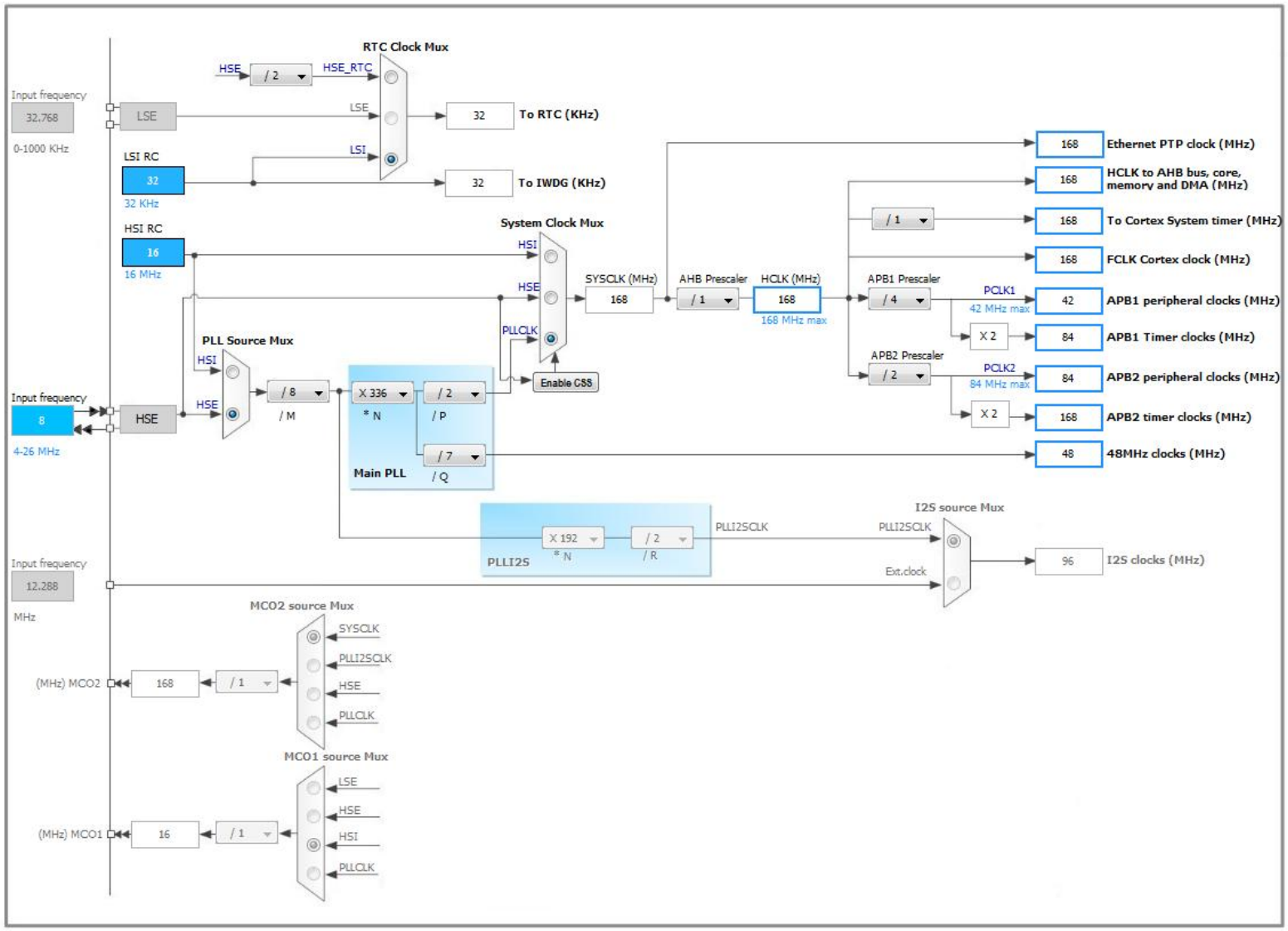
Mode:	**Circular ***
Use fifo:	Disable
PeripheralIncrement:	Disable
MemoryIncrement:	**Enable ***
Peripheral Data Width:	**Half Word ***

5.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
System tick timer	true	0	0
USART3 global interrupt	true	1	0
DMA2 Stream0 global interrupt	true	2	0
Non Maskable Interrupt	unused		
Memory management fault	unused		
Pre-fetch fault, memory access fault	unused		
Undefined instruction or illegal state	unused		
Debug Monitor	unused		
RCC global interrupt	unused		
ADC1, ADC2 and ADC3 global interrupts	unused		
RTC Alarms (A and B) through EXTI Line17 interrupt	unused		
SDIO global interrupt	unused		
USB On The Go FS global interrupt	unused		

*** User modified value**

6. Clock Tree Configuration



7. Software Project

7.1. Project Settings

Name	Value
Project Name	MySniperLocator
Project Folder	D:\REPOSITORY\GIT\SnIpErLoCaToR\sl_altium\stm32
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_F4 V1.5.0

7.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	Copy all used libraries into the project folder
Generate peripheral initialization as a pair of '.c/.h' files	No
Backup previously generated files when re-generating	No
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No

7.3. Toolchains Settings

Name	Value
Compiler Optimizations	Balanced Size/Speed