1. Description

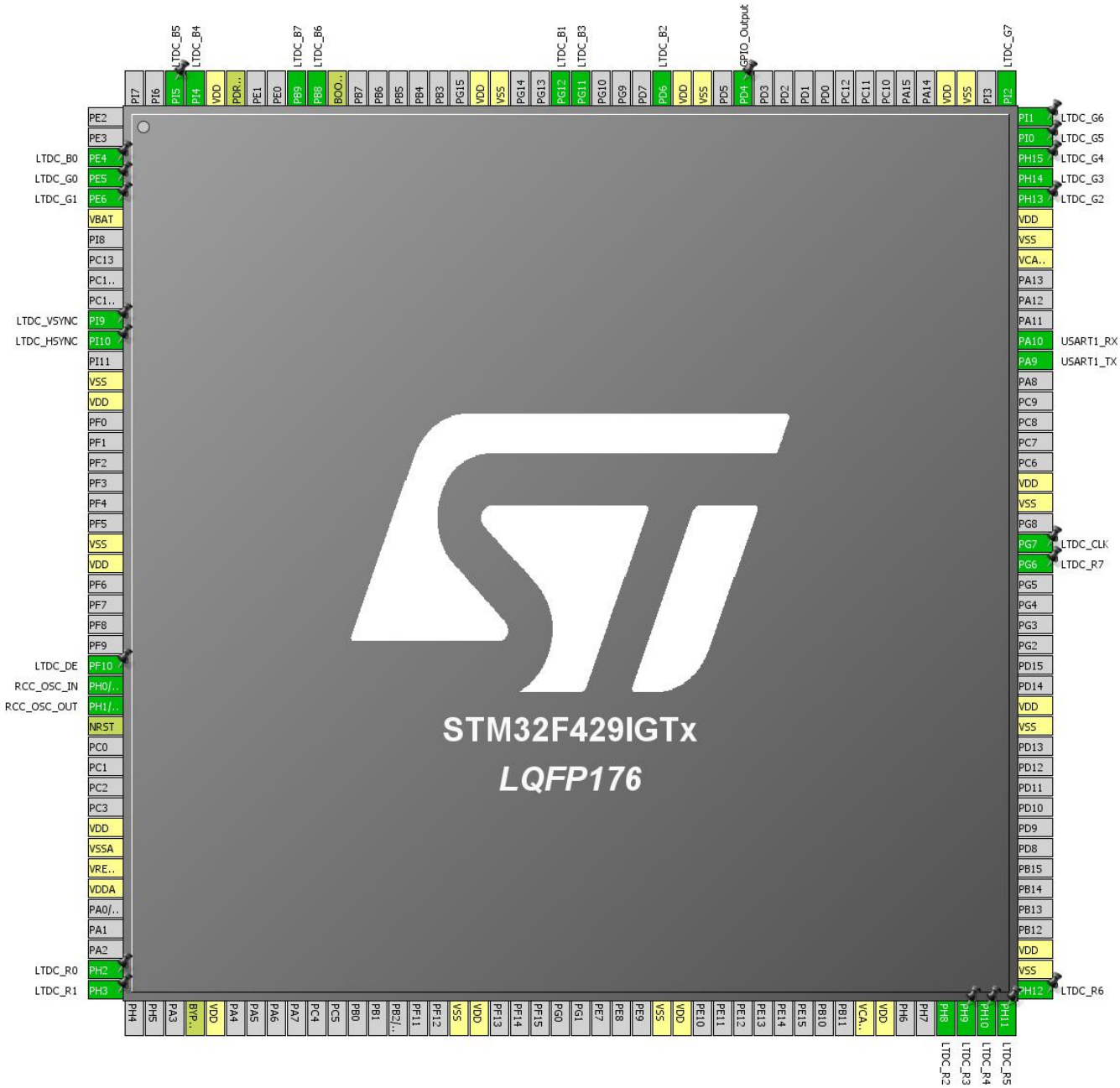
1.1. Project

Project Name	STM32F429I
Board Name	STM32F429I
Generated with:	STM32CubeMX 4.12.0
Date	01/06/2016

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F429/439
MCU name	STM32F429IGTx
MCU Package	LQFP176
MCU Pin number	176

2. Pinout Configuration



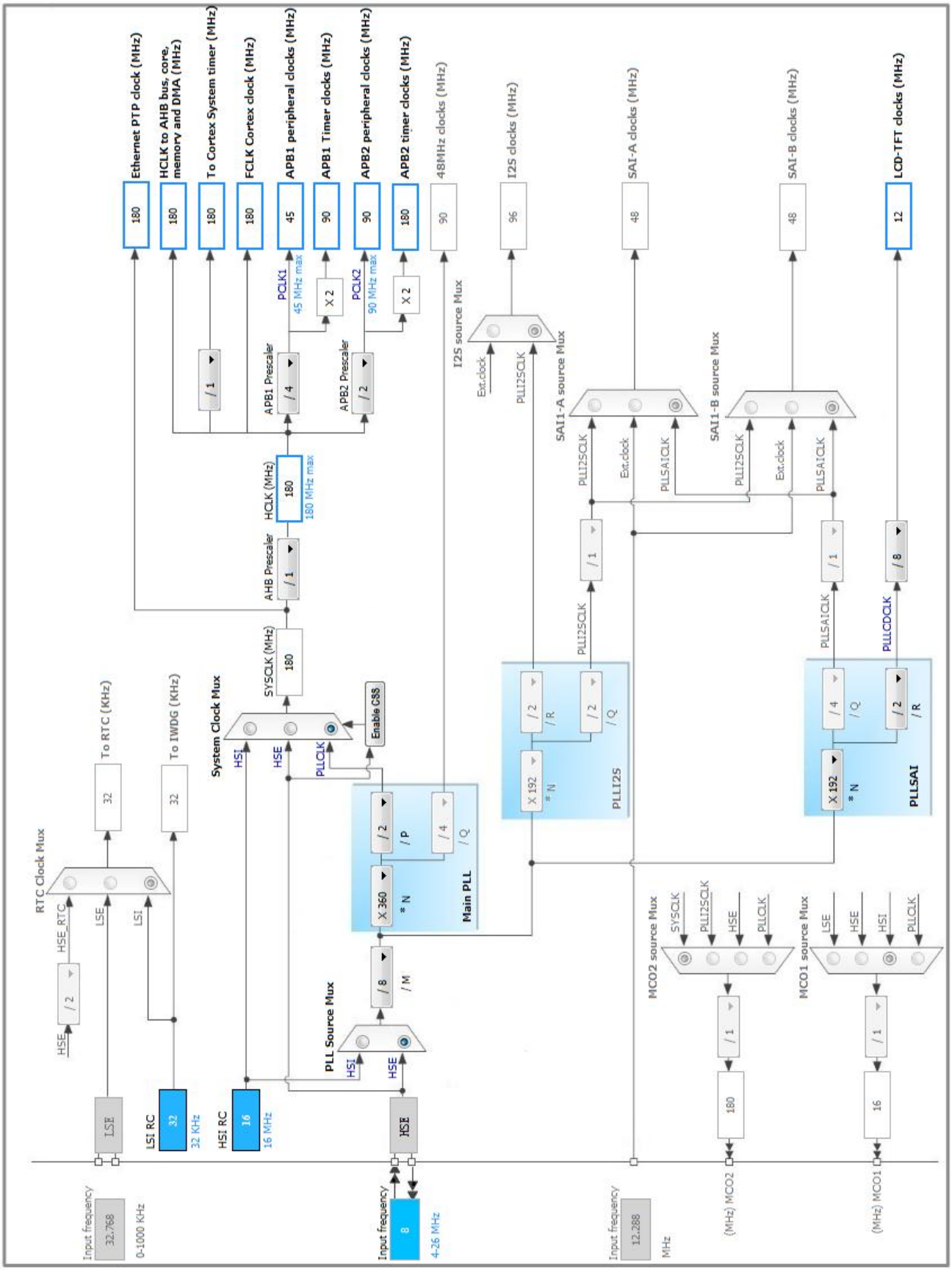
3. Pins Configuration

Pin Number LQFP176	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
3	PE4	I/O	LTDC_B0	
4	PE5	I/O	LTDC_G0	
5	PE6	I/O	LTDC_G1	
6	VBAT	Power		
11	PI9	I/O	LTDC_VSYNC	
12	PI10	I/O	LTDC_HSYNC	
14	VSS	Power		
15	VDD	Power		
22	VSS	Power		
23	VDD	Power		
28	PF10	I/O	LTDC_DE	
29	PH0/OSC_IN	I/O	RCC_OSC_IN	
30	PH1/OSC_OUT	I/O	RCC_OSC_OUT	
31	NRST	Reset		
36	VDD	Power		
37	VSSA	Power		
38	VREF+	Power		
39	VDDA	Power		
43	PH2	I/O	LTDC_R0	
44	PH3	I/O	LTDC_R1	
48	BYPASS_REG	Reset		
49	VDD	Power		
61	VSS	Power		
62	VDD	Power		
71	VSS	Power		
72	VDD	Power		
81	VCAP_1	Power		
82	VDD	Power		
85	PH8	I/O	LTDC_R2	
86	PH9	I/O	LTDC_R3	
87	PH10	I/O	LTDC_R4	
88	PH11	I/O	LTDC_R5	
89	PH12	I/O	LTDC_R6	
90	VSS	Power		
91	VDD	Power		
102	VSS	Power		

Pin Number LQFP176	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
103	VDD	Power		
110	PG6	I/O	LTDC_R7	
111	PG7	I/O	LTDC_CLK	
113	VSS	Power		
114	VDD	Power		
120	PA9	I/O	USART1_TX	
121	PA10	I/O	USART1_RX	
125	VCAP_2	Power		
126	VSS	Power		
127	VDD	Power		
128	PH13	I/O	LTDC_G2	
129	PH14	I/O	LTDC_G3	
130	PH15	I/O	LTDC_G4	
131	PI0	I/O	LTDC_G5	
132	PI1	I/O	LTDC_G6	
133	PI2	I/O	LTDC_G7	
135	VSS	Power		
136	VDD	Power		
146	PD4 *	I/O	GPIO_Output	
148	VSS	Power		
149	VDD	Power		
150	PD6	I/O	LTDC_B2	
154	PG11	I/O	LTDC_B3	
155	PG12	I/O	LTDC_B1	
158	VSS	Power		
159	VDD	Power		
166	BOOT0	Boot		
167	PB8	I/O	LTDC_B6	
168	PB9	I/O	LTDC_B7	
171	PDR_ON	Reset		
172	VDD	Power		
173	PI4	I/O	LTDC_B4	
174	PI5	I/O	LTDC_B5	

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. LTDC

Display Type: RGB888 (24 bits)

5.1.1. Parameter Settings:

Synchronization for Width:

Horizontal Synchronization Width	**10 ***
Horizontal Back Porch	**2 ***
Active Width	**480 ***
Horizontal Front Porch	**2 ***
HSync Width	9
Accumulated Horizontal Back Porch Width	11
Accumulated Active Width	491
Total Width	493

Synchronization for Height:

Vertical Synchronization Height	**2 ***
Vertical Back Porch	**10 ***
Active Height	**272 ***
Vertical Front Porch	2
VSync Height	1
Accumulated Vertical Back Porch Height	11
Accumulated Active Height	283
Total Height	285

Signal Polarity:

Horizontal Synchronization Polarity	Active Low
Vertical Synchronization Polarity	Active Low
Data Enable Polarity	Active Low
Pixel Clock Polarity	Normal Input

BackGround Color:

Red	0
Green	0
Blue	0

5.1.2. Layer Settings:

BackGround Color:

Layer 0 - Blue	0
Layer 0 - Green	0
Layer 0 - Red	0
Layer 1 - Blue	0
Layer 1 - Green	0
Layer 1 - Red	0

Windows Position:

Layer 0 - Window Horizontal Start	0
Layer 0 - Window Horizontal Stop	**480 ***
Layer 0 - Window Vertical Start	0
Layer 0 - Window Vertical Stop	**272 ***
Layer 1 - Window Horizontal Start	0
Layer 1 - Window Horizontal Stop	**272 ***
Layer 1 - Window Vertical Start	0
Layer 1 - Window Vertical Stop	**480 ***

Pixel Parameters:

Layer 0 - Pixel Format	**RGB565 ***
Layer 1 - Pixel Format	**RGB565 ***

Blending:

Layer 0 - Alpha constant for blending	**0xFF ***
Layer 0 - Default Alpha value	0
Layer 0 - Blending Factor1	Alpha constant
Layer 0 - Blending Factor2	Alpha constant
Layer 1 - Alpha constant for blending	0
Layer 1 - Default Alpha value	0
Layer 1 - Blending Factor1	**Alpha constant x Pixel Alpha ***
Layer 1 - Blending Factor2	**Alpha constant x Pixel Alpha ***

Frame Buffer:

Layer 0 - Color Frame Buffer Start Adress	**0xD0000000 ***
Layer 0 - Color Frame Buffer Line Length (Image Width)	**480 ***
Layer 0 - Color Frame Buffer Number of Lines (Image Height)	**272 ***
Layer 1 - Color Frame Buffer Start Adress	**0xD0060000 ***
Layer 1 - Color Frame Buffer Line Length (Image Width)	**480 ***
Layer 1 - Color Frame Buffer Number of Lines (Image Height)	**272 ***

5.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.2.1. Parameter Settings:

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
TIM Prescaler Selection	Disabled

Power Parameters:

Power Regulatror Voltage Scale	Power Regulator Voltage Scale 1
Power Over Drive	Enabled

5.3. USART1

Mode: Asynchronous

5.3.1. Parameter Settings:

Basic Parameters:

Baud Rate	115200
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
LTDC	PE4	LTDC_B0	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PE5	LTDC_G0	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PE6	LTDC_G1	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PI9	LTDC_VSYNC	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PI10	LTDC_HSYNC	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PF10	LTDC_DE	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH2	LTDC_R0	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH3	LTDC_R1	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH8	LTDC_R2	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH9	LTDC_R3	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH10	LTDC_R4	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH11	LTDC_R5	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH12	LTDC_R6	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PG6	LTDC_R7	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PG7	LTDC_CLK	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH13	LTDC_G2	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH14	LTDC_G3	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PH15	LTDC_G4	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PI0	LTDC_G5	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PI1	LTDC_G6	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PI2	LTDC_G7	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PD6	LTDC_B2	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PG11	LTDC_B3	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PG12	LTDC_B1	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PB8	LTDC_B6	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PB9	LTDC_B7	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PI4	LTDC_B4	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	
	PI5	LTDC_B5	Alternate Function Push Pull	No pull-up and no pull-down	**Fast ***	

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	PH0/OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1/OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	Pull-up	**High ***	
	PA10	USART1_RX	Alternate Function Push Pull	Pull-up	**High ***	
GPIO	PD4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

6.2. DMA configuration

nothing configured in DMA service

6.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
System tick timer	true	0	0
Non maskable interrupt	unused		
Hard fault interrupt	unused		
Memory management fault	unused		
Pre-fetch fault, memory access fault	unused		
Undefined instruction or illegal state	unused		
Debug monitor	unused		
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
USART1 global interrupt	unused		
LTDC global interrupt	unused		
LTDC global error interrupt	unused		

*** User modified value**

7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F429/439
MCU	STM32F429IGTx
Datasheet	024030_Rev5

7.2. Parameter Selection

Temperature	25
Vdd	null

8. Software Project

8.1. Project Settings

Name	Value
Project Name	STM32F429I
Project Folder	C:\Users\Administrator\Desktop\stm32cube\STM32F429I\26.LDTC\1.LDTC LCD
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F4 V1.10.0

8.2. 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	Yes
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