Pin N°	Pin Name	Pin Type	5V pin Tolerant	Functions	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15	Default Function HydraBus	HydraNFC TRF7970A
1	VBAT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+3V3	-
2	PC13	I/O	YES	EVENTOUT / RTC_AF1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3	PC14-OSC32_IN (PC14)	I/O	YES	EVENTOUT / OSC32_IN(4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Optional RTC 32.768KHz	
4	PC15-OSC32_OUT (PC15)	I/O	YES	EVENTOUT / OSC32_OUT(4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Optional RTC 32.768KHz	
5	PH0-OSC_IN (PH0)	I/O	YES	EVENTOUT / OSC_IN(4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Quartz 8MHz	
6	PH1-OSC_OUT (PH1)	I/O	YES	EVENTOUT / OSC_OUT(4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Quartz 8MHz	
7	NRST	I/O	YES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Reset Button / SWD_DEBUG	
8	PC0	I/O	YES	ADC123_IN10	-	-	-	-	-	-	-	-	-	-	OTG_HS_ULPI_STP	-	-	-	-	EVENTOUT		TRF7970A IO2 pin19 (Special Direct Mode TX Enable) (MCU Set to "1" for SPI with SS)
9	PC1	I/O	YES	ADC123_IN11	-	-	-	-	-	-	-	-	-	-	-	ETH_MDC	-	-	-	EVENTOUT		TRF7970A IO4_SS pin21 (MCU SPI2 CS Master)
10	PC2	I/O	YES	ADC123_IN12	-	-	-	-	-	SPI2_MISO	I2S2ext_SD	-	-	-	OTG_HS_ULPI_DIR	ETH_MII_TXD2	-	-	-	EVENTOUT		TRF7970A IO6_MISO SPI pin23 (MCU SPI2 MISO Master)
11	PC3	I/O	YES	ADC123_IN13	-	-	-	-	-	SPI2_MOSI I2S2_SD	-	-	-	-	OTG_HS_ULPI_NXT	ETH_MII_TX_CLK	-	-	-	EVENTOUT		TRF7970A IO7_MOSI SPI pin24 (MCU SPI2 MOSI Master)
12	VSSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
13	VDDA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
14	PA0-WKUP (PA0)	I/O	YES	ADC123_IN0 / WKUP(4)	-	TIM2_CH1 TIM2_ETR	TIM5_CH1	TIM8_ETR	-	-	-	USART2_CTS	UART4_TX	-	-	ETH_MII_CRS	-	-	-	EVENTOUT	UBTN (User Button 0) Can be disabled by removing Jumper JMP1 UBTN	HydraBus UBTN ABORT_BUTTON (MCU In)
15	PA1	I/O	YES	ADC123_IN1	-	TIM2_CH2	TIM5_CH2	-	-	-	-	USART2_RTS	UART4_RX	-	-	ETH_MII_RX_CLK ETH_RMII_REF_CLK	-	-	-	EVENTOUT		TRF7970A IRQ pin13 (MCU Input IRQ_PIN)
16	PA2	I/O	YES	ADC123_IN2	-	TIM2_CH3	TIM5_CH3	TIM9_CH1	-	-	-	USART2_TX	-	-	-	ETH_MDIO	-	-	-	EVENTOUT		TRF7970A IO1 pin18 (MCU Out set to "1" for SPI with SS)
17	PA3	I/O	YES	ADC123_IN3	-	TIM2_CH4	TIM5_CH4	TIM9_CH2	-	-	-	USART2_RX	-	-	OTG_HS_ULPI_D0	ETH_MII_COL	-	-	-	EVENTOUT		TRF7970A IO0 pin17 (MCU Out set to "0" for SPI with SS)
18	VSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
19	VDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
20	PA4	I/O	NO (3.3V)	ADC12_IN4 / DAC1_OUT	-	-	-	-	-	SPI1_NSS	SPI3_NSS I2S3_WS	USART2_CK	-	-	-	-	OTG_HS_SOF	DCMI_HSYNC	-	EVENTOUT	ULED (User LED 0) Can be disabled by removing Jumper JMP1 ULED	
21	PA5	I/O	NO (3.3V)	ADC12_IN5 / DAC2_OUT	-	TIM2_CH1 TIM2_ETR	-	TIM8_CH1N	-	SPI1_SCK	-	-	-	-	OTG_HS_ULPI_CK	-	-	-	-	EVENTOUT		TRF7970A SYS_CLK pin27 (MCU SPI1 SCK Slave) (Sniffer mode)
22	PA6	I/O	YES	ADC12_IN6	-	TIM1_BKIN	TIM3_CH1	TIM8_BKIN	-	SPI1_MISO	-	-	-	TIM13_CH1	-	-	-	DCMI_PIXCK	-	EVENTOUT		(MCU SPI1 MISO Not used/Not connected)
23	PA7	I/O	YES	ADC12_IN7	-	TIM1_CH1N	TIM3_CH2	TIM8_CH1N	-	SPI1_MOSI	-	-	-	TIM14_CH1	-	ETH_MII_RX_DV ETH_RMII_CRS_DV	-	-	-	EVENTOUT		TRF7970A MOD pin14 (IN/OUT) (MCU SPI1 MOSI Slave) (Sniffer mode)
24	PC4	I/O	YES	ADC12_IN14	-	-	-	-	-	-	-	-	-	-	-	ETH_MII_RXD0 ETH_RMII_RXD0	-	-	-	EVENTOUT		TRF7970A IO5 pin22 (not used for SPI mode / Data clock OUT) (MCU Out set to 0 default)
25	PC5	I/O	YES	ADC12_IN15	-	-	-	-	-	-	-	-	-	-	-	ETH_MII_RXD1 ETH_RMII_RXD1	-	-	-	EVENTOUT		TRF7970A IO3 pin20 (Special Direct Mode TX_Data) (not used for SPI mode) (MCU Out set to 0 default / NA in SPI with SS)
26	PB0	I/O	YES	ADC12_IN8	-	TIM1_CH2N	TIM3_CH3	TIM8_CH2N	-	-	-	-	-	-	OTG_HS_ULPI_D1	ETH_MII_RXD2	-	-	-	EVENTOUT		LED D2 or TST_PIN (TST_ON/TST_OFF) MCU Out fastest for oscilloscope timing checks
27	PB1	I/O	YES	ADC12_IN9	-	TIM1_CH3N	TIM3_CH4	TIM8_CH3N	-	-	-	-	-	-	OTG_HS_ULPI_D2	ETH_MII_RXD3	-	-	-	EVENTOUT		TRF7970A ASK_OOK pin12 (IN/OUT)
28	PB2-BOOT1 (PB2)	I/O	YES		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EVENTOUT		
29	PB10	I/O	YES		-	TIM2_CH3	-	-	I2C2_SCL	SPI2_SCK I2S2_CK	-	USART3_TX	-	-	OTG_HS_ULPI_D3	ETH_MII_RX_ER	-	-	-	EVENTOUT		TRF7970A DATA_CLK pin26 (MCU SPI2 SCK Master)
30	PB11	I/O	YES		-	TIM2_CH4	-	-	I2C2_SDA	-	-	USART3_RX	-	-	OTG_HS_ULPI_D4	ETH_MII_TX_EN ETH_RMII_TX_EN	-	-	-	EVENTOUT		TRF7970A EN (Chip Enable) pin28 (MCU Out set to "1"to enable TRF7970A)
31	VCAP_1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
32	VDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
33	PB12	I/O	YES		-	TIM1_BKIN	-	-	I2C2_SMBA	SPI2_NSS I2S2_WS	-	USART3_CK	-	CAN2_RX	OTG_HS_ULPI_D5	ETH_MII_TXD0 ETH_RMII_TXD0	OTG_HS_ID	-	-	EVENTOUT	USB ID (USB1 connector)	
34	PB13	I/O	YES	OTG_HS_VBUS	-	TIM1_CH1N	-	-	-	SPI2_SCK I2S2_CK	-	USART3_CTS	-	CAN2_TX	OTG_HS_ULPI_D6	ETH_MII_TXD1 ETH_RMII_TXD1	-	-	-	EVENTOUT	Supply VUSB (USB1 connector)	
35	PB14	I/O	YES		-	TIM1_CH2N	-	TIM8_CH2N	-	SPI2_MISO	I2S2ext_SD	USART3_RTS	-	TIM12_CH1	-	-	OTG_HS_DM	-	-	EVENTOUT	USB D- (USB1 connector)	
36	PB15	I/O	YES		RTC_50Hz	TIM1_CH3N	-	TIM8_CH3N	-	SPI2_MOSI I2S2_SD	-	-	-	TIM12_CH2	-	-	OTG_HS_DP	-	-	EVENTOUT	USB D+ (USB1 connector)	
37	PC6	I/O	YES		-	-	TIM3_CH1	TIM8_CH1	-	I2S2_MCK	-	-	USART6_TX	-	-	-	SDIO_D6	DCMI_D0	-	EVENTOUT		
38	PC7	I/O	YES		-	-	TIM3_CH2	TIM8_CH2	-	-	I2S3_MCK	-	USART6_RX	-	-	-	SDIO_D7	DCMI_D1	-	EVENTOUT		
39	PC8	I/O	YES		-	-	TIM3_CH3	TIM8_CH3	-	-	-	-	USART6_CK	-	-	-	SDIO_D0	DCMI_D2	-	EVENTOUT	MicroSD Card SD 4bits SDIO_D0	
40	PC9	I/O	YES		MCO2	-	TIM3_CH4	TIM8_CH4	I2C3_SDA	I2S_CKIN	-	-	-	-	-	-	SDIO_D1	DCMI_D3	-	EVENTOUT	MicroSD Card SD 4bits SDIO_D1	
41	PA8	I/O	YES		MCO1	TIM1_CH1	-	-	I2C3_SCL	-	-	USART1_CK	-	-	OTG_FS_SOF	-	-	-	-	EVENTOUT		
42	PA9	I/O	YES	OTG_FS_VBUS	-	TIM1_CH2	-	-	I2C3_SMBA	-	-	USART1_TX	-	-	-	-	-	DCMI_D0	-	EVENTOUT		
43	PA10	I/O	YES		-	TIM1_CH3	-	-	-	-	-	USART1_RX	-	-	OTG_FS_ID	-	-	DCMI_D1	-	EVENTOUT		
44	PA11	I/O	YES		-	TIM1_CH4	-	-	-	-	-	USART1_CTS	-	CAN1_RX	OTG_FS_DM	-	-	-	-	EVENTOUT	USB D- (USB0 connector)	
45	PA12	I/O	YES		-	TIM1_ETR	-	-	-	-	-	USART1_RTS	-	CAN1_TX	OTG_FS_DP	-	-	-	-	EVENTOUT	USB D+ (USB0 connector)	
46	PA13 (JTMS-SWDIO)	I/O	YES		JTMS-SWDIO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EVENTOUT	SWDIO	
47	VCAP_2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
48	VDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
49	PA14 (JTCK-SWCLK)	I/O	YES		TCK-SWCLK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EVENTOUT	SWCLK	
50	PA15 (JTDI)	I/O	YES		JTDI	TIM2_CH1 TIM2_ETR	-	-	-	SPI1_NSS	SPI3_NSS/ I2S3_WS	-	-	-	-	-	-	-	-	EVENTOUT		(MCU SPI1 NSS Slave) (Sniffer mode)
51	PC10	I/O	YES		-	-	-	-	-	-	SPI3_SCK/ I2S3_CK	USART3_TX/	UART4_TX	-	-	-	SDIO_D2	DCMI_D8	-	EVENTOUT	MicroSD Card SD 4bits SDIO_D2	
52	PC11	I/O	YES		-	-	-	-	-	I2S3ext_SD	SPI3_MISO/	USART3_RX	UART4_RX	-	-	-	SDIO_D3	DCMI_D4	-	EVENTOUT	MicroSD Card SD 4bits SDIO_D3	
53	PC12	I/O	YES		-	-	-	-	-	-	SPI3_MOSI I2S3_SD	USART3_CK	UART5_TX	-	-	-	SDIO_CK	DCMI_D9	-	EVENTOUT	MicroSD Card SD 4bits SDIO_CK	
54	PD2	I/O	YES		-	-	TIM3_ETR	-	-	-	-	-	UART5_RX	-	-	-	SDIO_CMD	DCMI_D11	-	EVENTOUT	MicroSD Card SD 4bits SDIO_CMD	
55	PB3 (JTDO/ TRACESWO)	I/O	YES		JTDO/ TRACESWO	TIM2_CH2	-	-	-	SPI1_SCK	SPI3_SCK I2S3_CK	-	-	-	-	-	-	-	-	EVENTOUT	LED D3 (MCU Out)	
56	PB4 (NJTRST)	I/O	YES		NJTRST	-	TIM3_CH1	-	-	SPI1_MISO	SPI3_MISO	I2S3ext_SD	-	-	-	-	-	-	-	EVENTOUT	LED D4 (MCU Out)	
57	PB5	I/O	YES		-	-	TIM3_CH2	-	I2C1_SMBA	SPI1_MOSI	SPI3_MOSI I2S3_SD	-	-	CAN2_RX	OTG_HS_ULPI_D7	ETH_PPS_OUT	-	DCMI_D10	-	EVENTOUT	LED D5 (MCU Out)	
58	PB6	I/O	YES		-	-	TIM4_CH1	-	I2C1_SCL	-	-	USART1_TX	-	CAN2_TX	-	-	-	DCMI_D5	-	EVENTOUT	BUTTON K2 (MCU In)	
59	PB7	I/O	YES		-	-	TIM4_CH2	-	I2C1_SDA	-	-	USART1_RX	-	-	-	-	FSMC_NL	DCMI_VSYNC	-	EVENTOUT	BUTTON K1 (MCU In)	
60	BOOT0	I	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Default Boot from Flash (pull-down resistor 2.2Kohms)	
61	PB8	I/O	YES		-	-	TIM4_CH3	TIM10_CH1	I2C1_SCL	-	-	-	-	CAN1_RX	-	ETH_MII_TXD3	SDIO_D4	DCMI_D6	-	EVENTOUT	BUTTON K3 (MCU In)	
62	PB9	I/O	YES		-	-	TIM4_CH4	TIM11_CH1	I2C1_SDA	SPI2_NSS I2S2_WS	-	-	-	CAN1_TX	-	-	SDIO_D5	DCMI_D7	-	EVENTOUT	BUTTON K4 (MCU In)	
63	VSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
64	VDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Legend:
- Pin 3.3V Only !! Not 5V tolerant
- Default Function HydraBus
- HydraBus Conf HydraNFC TRF7970A

STM32F405RGT_TRF7970A_IO

Pin N°	Pin Name	Pin Type	5V pin Tolerant	Functions	AF0	AF1	AF2	AF3	AF4	AF5	AF6	AF7	AF8	AF9	AF10	AF11	AF12	AF13	AF14	AF15	Default Function HydraBus	HydraNFC TRF7970A
1	VBAT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+3V3	
12	VSSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	VDDA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	VSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	VDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	VCAP_1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	VDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	PB12	I/O	YES			TIM1_BKIN			I2C2_SMBA	SPI2_NSS/I2S2_WS		USART3_CK		CAN2_RX	OTG_HS_ULPI_D5	ETH_MII_TXD0/ETH_RMII_TXD0	OTG_HS_ID			EVENTOUT	USB ID (USB1 connector)	
34	PB13	I/O	YES	OTG_HS_VBUS		TIM1_CH1N				SPI2_SCK/I2S2_CK		USART3_CTS		CAN2_TX	OTG_HS_ULPI_D6	ETH_MII_TXD1/ETH_RMII_TXD1				EVENTOUT	Supply VUSB (USB1 connector)	
35	PB14	I/O	YES			TIM1_CH2N		TIM8_CH2N		SPI2_MISO	I2S2ext_SD	USART3_RTS		TIM12_CH1			OTG_HS_DM			EVENTOUT	USB D- (USB1 connector)	
36	PB15	I/O	YES		RTC_50Hz	TIM1_CH3N		TIM8_CH3N		SPI2_MOSI/I2S2_SD				TIM12_CH2			OTG_HS_DP			EVENTOUT	USB D+ (USB1 connector)	
39	PC8	I/O	YES				TIM3_CH3	TIM8_CH3					USART6_CK				SDIO_D0	DCMI_D2		EVENTOUT	MicroSD Card SD 4bits SDIO_D0	
40	PC9	I/O	YES		MCO2		TIM3_CH4	TIM8_CH4	I2C3_SDA	I2S_CKIN							SDIO_D1	DCMI_D3		EVENTOUT	MicroSD Card SD 4bits SDIO_D1	
44	PA11	I/O	YES			TIM1_CH4						USART1_CTS		CAN1_RX	OTG_FS_DM					EVENTOUT	USB D- (USB0 connector)	
45	PA12	I/O	YES			TIM1_ETR						USART1_RTS		CAN1_TX	OTG_FS_DP					EVENTOUT	USB D+ (USB0 connector)	
46	PA13 (JTMS-SWDIO)	I/O	YES		JTMS-SWDIO															EVENTOUT	SWDIO	
47	VCAP_2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	VDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
49	PA14 (JTCK-SWCLK)	I/O	YES		TCK-SWCLK															EVENTOUT		
51	PC10	I/O	YES								SPI3_SCK/I2S3S_CK	USART3_TX/	UART4_TX				SDIO_D2	DCMI_D8		EVENTOUT	MicroSD Card SD 4bits SDIO_D2	
52	PC11	I/O	YES							I2S3ext_SD	SPI3_MISO/	USART3_RX	UART4_RX				SDIO_D3	DCMI_D4		EVENTOUT	MicroSD Card SD 4bits SDIO_D3	
53	PC12	I/O	YES								SPI3_MOSI/I2S3_SD	USART3_CK	UART5_TX				SDIO_CK	DCMI_D9		EVENTOUT	MicroSD Card SD 4bits SDIO_CK	
54	PD2	I/O	YES				TIM3_ETR						UART5_RX				SDIO_CMD	DCMI_D11		EVENTOUT	MicroSD Card SD 4bits SDIO_CMD	
60	BOOT0	I	-																		Default Boot from Flash (pull-down resistor 2.2Kohms)	
63	VSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
64	VDD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
59	PB7	I/O	YES				TIM4_CH2		I2C1_SDA			USART1_RX					FSMC_NL	DCMI_VSYNC		EVENTOUT		BUTTON K1 (MCU In)
58	PB6	I/O	YES				TIM4_CH1		I2C1_SCL			USART1_TX		CAN2_TX				DCMI_D5		EVENTOUT		BUTTON K2 (MCU In)
61	PB8	I/O	YES				TIM4_CH3	TIM10_CH1	I2C1_SCL					CAN1_RX		ETH_MII_TXD3	SDIO_D4	DCMI_D6		EVENTOUT		BUTTON K3 (MCU In)
62	PB9	I/O	YES				TIM4_CH4	TIM11_CH1	I2C1_SDA	SPI2_NSS/I2S2_WS				CAN1_TX			SDIO_D5	DCMI_D7		EVENTOUT		BUTTON K4 (MCU In)
14	PA0-WKUP (PA0)	I/O	YES	ADC123_IN0 / WKUP(4)		TIM2_CH1/TIM2_ETR	TIM5_CH1	TIM8_ETR				USART2_CTS	UART4_TX			ETH_MII_CRS				EVENTOUT	UBTN (User Button 0) Can be disabled by removing Jumper JMP1 UBTN	HydraBus UBTN ABORT_BUTTON (MCU In)
26	PB0	I/O	YES	ADC12_IN8		TIM1_CH2N	TIM3_CH3	TIM8_CH2N							OTG_HS_ULPI_D1	ETH_MII_RXD2				EVENTOUT		LED D2 or TST_PIN (TST_ON/TST_OFF) MCU Out fastest for oscilloscope timing checks
55	PB3 (JTDO/TRACESWO)	I/O	YES		JTDO/TRACESWO	TIM2_CH2				SPI1_SCK	SPI3_SCK/I2S3_CK									EVENTOUT		LED D3 (MCU Out)
56	PB4 (NJTRST)	I/O	YES		NJTRST		TIM3_CH1			SPI1_MISO	SPI3_MISO	I2S3ext_SD								EVENTOUT		LED D4 (MCU Out)
57	PB5	I/O	YES				TIM3_CH2		I2C1_SMBA	SPI1_MOSI	SPI3_MOSI/I2S3_SD			CAN2_RX	OTG_HS_ULPI_D7	ETH_PPS_OUT		DCMI_D10		EVENTOUT		LED D5 (MCU Out)
27	PB1	I/O	YES	ADC12_IN9		TIM1_CH3N	TIM3_CH4	TIM8_CH3N							OTG_HS_ULPI_D2	ETH_MII_RXD3				EVENTOUT		TRF7970A ASK_OOK pin12 (IN/OUT)
15	PA1	I/O	YES	ADC123_IN1		TIM2_CH2	TIM5_CH2					USART2_RTS	UART4_RX			ETH_MII_RX_CLK/ETH_RMII_REF_CLK				EVENTOUT		TRF7970A IRQ pin13 (MCU Input IRQ_PIN)
22	PA6	I/O	YES	ADC12_IN6		TIM1_BKIN	TIM3_CH1	TIM8_BKIN		SPI1_MISO				TIM13_CH1				DCMI_PIXCK		EVENTOUT		(MCU SPI1 MISO Not used/Not connected)
23	PA7	I/O	YES	ADC12_IN7		TIM1_CH1N	TIM3_CH2	TIM8_CH1N		SPI1_MOSI				TIM14_CH1		ETH_MII_RX_DV/ETH_RMII_CRS_DV				EVENTOUT		TRF7970A MOD pin14 (IN/OUT) (MCU SPI1 MOSI Slave) (Sniffer mode)
21	PA5	I/O	NO (3.3V)	ADC12_IN5 / DAC2_OUT		TIM2_CH1/TIM2_ETR		TIM8_CH1N		SPI1_SCK					OTG_HS_ULPI_CK					EVENTOUT		TRF7970A SYS_CLK pin27 (MCU SPI1 SCK Slave) (Sniffer mode)
50	PA15 (JTDI)	I/O	YES		JTDI	TIM2_CH1/TIM2_ETR				SPI1_NSS	SPI3_NSS/I2S3S_WS									EVENTOUT		(MCU SPI1 NSS Slave) (Sniffer mode)
30	PB11	I/O	YES			TIM2_CH4			I2C2_SDA			USART3_RX			OTG_HS_ULPI_D4	ETH_MII_TX_EN/ETH_RMII_TX_EN				EVENTOUT		TRF7970A EN (Chip Enable) pin28 (MCU Out set to "1"to enable TRF7970A)
17	PA3	I/O	YES	ADC123_IN3		TIM2_CH4	TIM5_CH4	TIM9_CH2				USART2_RX			OTG_HS_ULPI_D0	ETH_MII_COL				EVENTOUT		TRF7970A IO0 pin17 (MCU Out set to "0" for SPI with SS)
16	PA2	I/O	YES	ADC123_IN2		TIM2_CH3	TIM5_CH3	TIM9_CH1				USART2_TX				ETH_MDIO				EVENTOUT		TRF7970A IO1 pin18 (MCU Out set to "1" for SPI with SS)
8	PC0	I/O	YES	ADC123_IN10											OTG_HS_ULPI_STP					EVENTOUT		TRF7970A IO2 pin19 (Special Direct Mode TX Enable) (MCU Out set to "1" for SPI with SS)
25	PC5	I/O	YES	ADC12_IN15												ETH_MII_RXD1/ETH_RMII_RXD1				EVENTOUT		TRF7970A IO3 pin20 (Special Direct Mode TX_Data) (not used for SPI mode) (MCU Out set to 0 default / NA in SPI with SS)
9	PC1	I/O	YES	ADC123_IN11												ETH_MDC				EVENTOUT		TRF7970A IO4_SS pin21 (MCU SPI2 CS Master)
24	PC4	I/O	YES	ADC12_IN14												ETH_MII_RXD0/ETH_RMII_RXD0				EVENTOUT		TRF7970A IO5 pin22 (not used for SPI mode / Data clock OUT) (MCU Out set to 0 default)
10	PC2	I/O	YES	ADC123_IN12						SPI2_MISO	I2S2ext_SD				OTG_HS_ULPI_DIR	ETH_MII_TXD2				EVENTOUT		TRF7970A IO6_MISO SPI pin23 (MCU SPI2 MISO Master)
11	PC3	I/O	YES	ADC123_IN13						SPI2_MOSI/I2S2_SD					OTG_HS_ULPI_NXT	ETH_MII_TX_CLK				EVENTOUT		TRF7970A IO7_MOSI SPI pin24 (MCU SPI2 MOSI Master)
29	PB10	I/O	YES			TIM2_CH3			I2C2_SCL	SPI2_SCK/I2S2_CK		USART3_TX			OTG_HS_ULPI_D3	ETH_MII_RX_ER				EVENTOUT		TRF7970A DATA_CLK pin26 (MCU SPI2 SCK Master)
2	PC13	I/O	YES	EVENTOUT / RTC_AF1																		
3	PC14-OSC32_IN (PC14)	I/O	YES	EVENTOUT / OSC32_IN(4)																	Optional RTC 32,768KHz	
4	PC15-OSC32_OUT (PC15)	I/O	YES	EVENTOUT / OSC32_OUT(4)																	Optional RTC 32,768KHz	
5	PH0-OSC_IN (PH0)	I/O	YES	EVENTOUT / OSC_IN(4)																	Quartz 8MHz	
6	PH1-OSC_OUT (PH1)	I/O	YES	EVENTOUT / OSC_OUT(4)																	Quartz 8MHz	
7	NRST	I/O	-																		Reset Button / SWD_DEBUG	
20	PA4	I/O	NO (3.3V)	ADC12_IN4 / DAC1_OUT						SPI1_NSS	SPI3_NSS/I2S3_WS	USART2_CK					OTG_HS_SOF	DCMI_HSYNC		EVENTOUT	ULED (User LED 0) Can be disabled by removing Jumper JMP1 ULED	
28	PB2-BOOT1 (PB2)	I/O	YES																	EVENTOUT		
37	PC6	I/O	YES				TIM3_CH1	TIM8_CH1		I2S2_MCK			USART6_TX				SDIO_D6	DCMI_D0		EVENTOUT		
38	PC7	I/O	YES				TIM3_CH2	TIM8_CH2			I2S3_MCK		USART6_RX				SDIO_D7	DCMI_D1		EVENTOUT		
41	PA8	I/O	YES		MCO1	TIM1_CH1			I2C3_SCL			USART1_CK			OTG_FS_SOF					EVENTOUT		
42	PA9	I/O	YES			TIM1_CH2			I2C3_SMBA			USART1_TX						DCMI_D0		EVENTOUT		
43	PA10	I/O	YES	OTG_FS_VBUS		TIM1_CH3						USART1_RX			OTG_FS_ID			DCMI_D1		EVENTOUT		

Pin 3.3V Only !! Not 5V tolerant
Default Function HydraBus
HydraBus Conf HydraNFC TRF7970A