ARDUINO

ARDUINO SYMBOL

red	A8	LEDR
green	C7	LEDG
blue	D7	LEDB

RGB LED

Battery Charger LED

USB Type-C

Temperature Sensor

Li-Po 3.7 V

GND		
PH8	I2C0 SDA	J1-44
PH7	I2C0 SCL	J1-46
PI0	SPI1 CS	J2-36
+5V		

AREF				AREF	
J2-73	ADC A0	PA0_C	A0	D15	
J2-75	ADC A1	PA1_C	A1	D16	
J2-77	ADC A2	PC2_C	A2	D17	
J2-79	ADC A3	PC3_C	A3	D18	
J2-74	ADC A4	PC2	A4	D19	
J2-76	ADC A5	PC3	A5	D20	
J2-78	ADC A6	PA4	A6	D21	
J2-62	PWM 7	PH15		D0	
J2-60	PWM 6	PK1		D1	
J2-67	PWM 5	PJ11		D2	
J2-65	PWM 4	PG7		D3	
J2-63	PWM 3	PC7		D4	
J2-61	PWM 2	PC6		D5	

STM32H747XIH

+5V		
VIN		
+3V3		
GND		
RESET		NRST	
D14	PA9	UART1 TX	J1-33
D13	PA10	UART1 RX	J1-35
D12	PH7	I2C0 SCL	J1-46
D11	PH8	I2C0 SDA	J1-44
D10	PC2	SPI1 MISO	J2-40
D9	PI2	SPI1 CK	J2-38
D8	PC3	SPI1 MOSI	J2-42
D7	PI0	SPI1 CS	J2-36
D6	PA8	PWM 1	J2-59

■ Ground	▨ Digital Pin	■ Analog
■ Power	▢ Analog Pin	▨ Communication
■ LED	▢ Other Pin	■ Timer
■ Internal Pin	■ Microcontroller's Port	■ Extra Features
■ SWD Pin	■ Default	▢ Debug
	■ High Density Connector	

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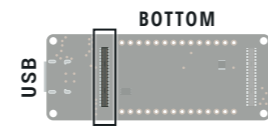⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

ARDUINO

J1

ETH A+	1	2		
ETH A-	3	4		
ETH B+	5	6		
ETH B-	7	8		
	9	10	DSI D1+	
	11	12	DSI D1-	
	13	14	DSI D0+	
	15	16	DSI D0-	
ETH L1	17	18	DSI CK+	
ETH L2	19	20	DSI CK-	
VIN	21	22	GND	
USB1 VBUS	23	24		
USB1 D+	25	26	USB0 D+	
USB1 D-	27	28	USB0 D-	
USB1 ID	29	30		
GND	31	32	VIN	
UART1 TX	33	34	UART0 TX	
UART1 RX	35	36	UART0 RX	
UART1 RTS	37	38	UART0 RTS	
UART1 CTS	39	40	UART0 CTS	
VIN	41	42	GND	
I2C1 SDA	43	44	I2C0 SDA	
I2C1 SD6	45	46	I2C0 SCL	
GND	47	48	VIN	
CAN1 TX	49	50		
CAN1 RX	51	52		
VSYS	53	54	GND	
SDC CLK	55	56	I2S MCK	
SDC CMD	57	58	I2S WS	
SDC D0	59	60	I2S DI	
SDC D1	61	62	I2S DO	
SDC D2	63	64	VSYS	
SDC D3	65	66	DMIC CK	
	67	68	DMIC D0	
	69	70		
	71	72	V-SDCARD	
RESET	73	74		
SWDIO	75	76		
SWCK	77	78		
SWO	79	80		

BOTTOM

USB

J2

ADC A7	80	79	ADC A3	
ADC A6	78	77	ADC A2	
ADC A5	76	75	ADC A1	
ADC A4	74	73	ADC A0	
ADC VREF-	72	71	ADC VREF+	
GND	70	69	VCC/+3V3	
PWM 10	68	67	PWM 5	
PWM 9	66	65	PWM 4	
PWM 8	64	63	PWM 3	
PWM 7	62	61	PWM 2	
PWM 6	60	59	PWM 1	
GPIO 6	58	57	GND	
GPIO 5	56	55		
GPIO 4	54	53	SAI D0	
GPIO 3	52	51	SAI FS	
GPIO 2	50	49	SAI CK	
GPIO 1	48	47	I2C2 SCL	
GPIO 0	46	45	I2C2 SDA	
GND	44	43	VCC/+3V3	
SPI1 MOSI	42	41		
SPI1 MISO	40	39		
SPI1 CK	38	37		
SPI1 CS	36	35		
VCC	34	33	GND	
	32	31		
	30	29		
UART2 RX	28	27	UART3 RX	
UART2 TX	26	25	UART3 TX	
GND	24	23	VCC/+3V3	
CAM HS	22	21		
CAM CLK	20	19		
CAM VS	18	17		
CAM D0	16	15		
CAM D1	14	13		
CAM D2	12	11		
CAM D3	10	9		
CAM D4	8	7	COINCELL	
CAM D5	6	5	POWER_ON_REQ	
CAM D6	4	3	BOOT_SOURCE	
CAM D7	2	1	FORCE_BOOTLOADER	

Legend

- Ground
- Power
- LED
- Internal Pin
- SWD Pin
- Digital Pin
- Analog Pin
- Other Pin
- Microcontroller's Port
- Default
- High Density Connector
- Analog
- Communication
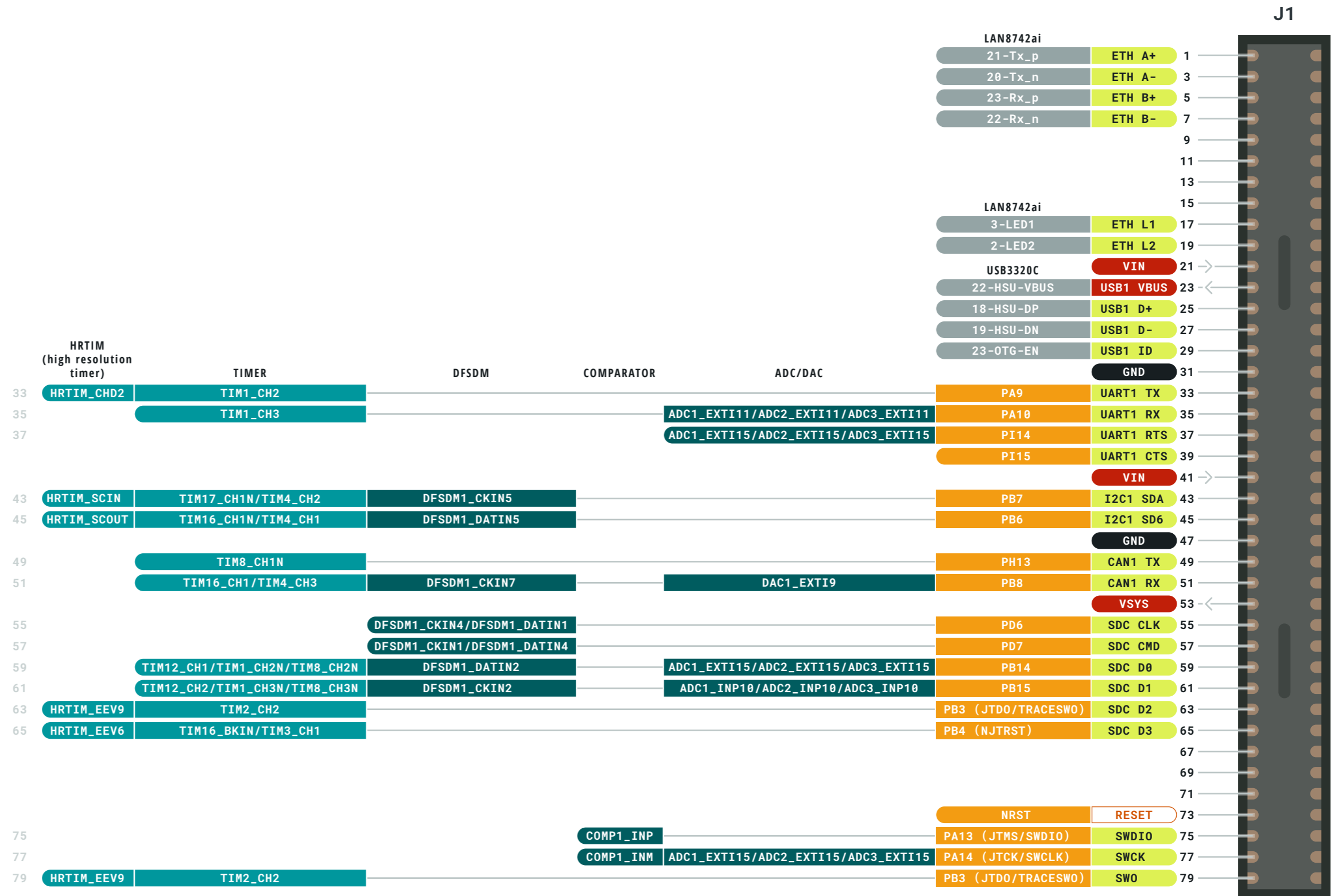- Timer
- Extra Features
- Debug

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J1

LAN8742ai			
21-Tx_p	ETH A+	1	
20-Tx_n	ETH A-	3	
23-Rx_p	ETH B+	5	
22-Rx_n	ETH B-	7	
		9	
		11	
		13	
		15	

LAN8742ai			
3-LED1	ETH L1	17	
2-LED2	ETH L2	19	
USB3320C	**VIN**	21	→
22-HSU-VBUS	USB1 VBUS	23	←
18-HSU-DP	USB1 D+	25	
19-HSU-DN	USB1 D-	27	
23-OTG-EN	USB1 ID	29	
	GND	31	

HRTIM (high resolution timer)	TIMER	DFSDM	COMPARATOR	ADC/DAC			
33 HRTIM_CHD2	TIM1_CH2				PA9	UART1 TX	33
35	TIM1_CH3			ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11	PA10	UART1 RX	35
37				ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15	PI14	UART1 RTS	37
					PI15	UART1 CTS	39
					VIN		41 →
43 HRTIM_SCIN	TIM17_CH1N/TIM4_CH2	DFSDM1_CKIN5			PB7	I2C1 SDA	43
45 HRTIM_SCOUT	TIM16_CH1N/TIM4_CH1	DFSDM1_DATIN5			PB6	I2C1 SD6	45
					GND		47
49	TIM8_CH1N				PH13	CAN1 TX	49
51	TIM16_CH1/TIM4_CH3	DFSDM1_CKIN7		DAC1_EXTI9	PB8	CAN1 RX	51
					VSYS		53 ←
55		DFSDM1_CKIN4/DFSDM1_DATIN1			PD6	SDC CLK	55
57		DFSDM1_CKIN1/DFSDM1_DATIN4			PD7	SDC CMD	57
59	TIM12_CH1/TIM1_CH2N/TIM8_CH2N	DFSDM1_DATIN2		ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15	PB14	SDC D0	59
61	TIM12_CH2/TIM1_CH3N/TIM8_CH3N	DFSDM1_CKIN2		ADC1_INP10/ADC2_INP10/ADC3_INP10	PB15	SDC D1	61
63 HRTIM_EEV9	TIM2_CH2				PB3 (JTDO/TRACESWO)	SDC D2	63
65 HRTIM_EEV6	TIM16_BKIN/TIM3_CH1				PB4 (NJTRST)	SDC D3	65
							67
							69
							71
					NRST	RESET	73
75			COMP1_INP		PA13 (JTMS/SWDIO)	SWDIO	75
77			COMP1_INM ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15		PA14 (JTCK/SWCLK)	SWCK	77
79 HRTIM_EEV9	TIM2_CH2				PB3 (JTDO/TRACESWO)	SWO	79

Legend

- ■ Ground
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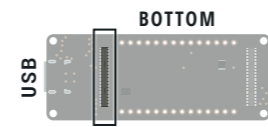⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

BOTTOM
USB

J1_odd - Communication

ARDUINO
PORTENTA H7

STORE.ARDUINO.CC/PORTENTA-H7

J1

LAN8742ai			
21-Tx_p	ETH A+	1	
20-Tx_n	ETH A-	3	
23-Rx_p	ETH B+	5	
22-Rx_n	ETH B-	7	
		9	
		11	
		13	
		15	

LAN8742ai			
3-LED1	ETH L1	17
2-LED2	ETH L2	19

USB3320C			
	VIN	21
22-HSU-VBUS	USB1 VBUS	23
18-HSU-DP	USB1 D+	25
19-HSU-DN	USB1 D-	27
23-OTG-EN	USB1 ID	29
	GND	31

Column headers (left to right):
FDCAN (can bus) | CRS (USB clock recovery system) | USB | ETH | LPUART (UART low power) | UART/USART | SDMMC (SPI) | QUAD-SPI | SPI | I2C/I2S | Microcontroller's Port | High Density Connector | Pin

#	FDCAN	CRS	USB	ETH	LPUART	UART/USART	SDMMC (SPI)	QUAD-SPI	SPI	I2C/I2S	Port	HDC	#
33	FDCAN1_TX		USB-OTG-FS_VBUS		LPUART1_TX	USART1_TX			SPI2_SCK	I2C3_SMBA/I2S2_CK	PA9	UART1 TX	33
35			USB-OTG-FS_ID		LPUART1_RX	USART1_RX					PA10	UART1 RX	35
											PI14	UART1 RTS	37
											PI15	UART1 CTS	39
												VIN	41
43					LPUART1_RX	USART1_RX	SDMMC1_D4/SDMMC2_D4			I2C1_SDA/I2C4_SDA	PB7	I2C1 SDA	43
45					LPUART1_TX	UART5_TX/USART1_TX		QUADSPI_BK1-NCS		I2C1_SCL/I2C4_SCL	PB6	I2C1 SD6	45
												GND	47
49						UART4_TX					PH13	CAN1 TX	49
51	FDCAN2_RX			ETH_TXD3		UART4_RX	SDMMC1_CKIN/ SDMMC1_D5/SDMMC2_D5			I2C1_SCL/I2C4_SCL	PB8	CAN1 RX	51
												VSYS	53
55						USART2_RX	SDMMC2_CK	QUADSPI_BK1-IO1	SPI3_MOSI	I2S3_SDO	PD6	SDC CLK	55
57						USART2_CK	SDMMC2_CMD	QUADSPI_BK1-IO3	SPI1_MOSI	I2S1_SDO	PD7	SDC CMD	57
59			USB-OTG-HS_DM			UART4_DE/UART4_RTS/USART1_TX/ USART3_DE/USART3_RTS	SDMMC2_D0		SPI2_MISO	I2S2_SDI	PB14	SDC D0	59
61			USB-OTG-HS_DP			UART4_CTS/USART1_RX	SDMMC2_D1		SPI2_MOSI	I2S2_SDO	PB15	SDC D1	61
63						UART7_RX	SDMMC2_D2		SPI1_SCK/SPI3_SCK/SPI6_SCK	I2S1_CK/I2S3_CK	PB3 (JTDO/TRACESWO)	SDC D2	63
65						UART7_TX	SDMMC2_D3		SPI1_MISO/SPI2_NSS/ SPI3_MISO/SPI6_MISO	I2S1_SDI/ I2S2_WS/I2S3_SDI	PB4 (NJTRST)	SDC D3	65
													67
													69
													71
											NRST	RESET	73
											PA13 (JTMS/SWDIO)	SWDIO	75
											PA14 (JTCK/SWCLK)	SWCK	77
79						UART7_RX	SDMMC2_D2		SPI1_SCK/SPI3_SCK/SPI6_SCK	I2S1_CK/I2S3_CK	PB3 (JTDO/TRACESWO)	SWO	79

Legend:

- Ground
- Power
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ARDUINO.CC

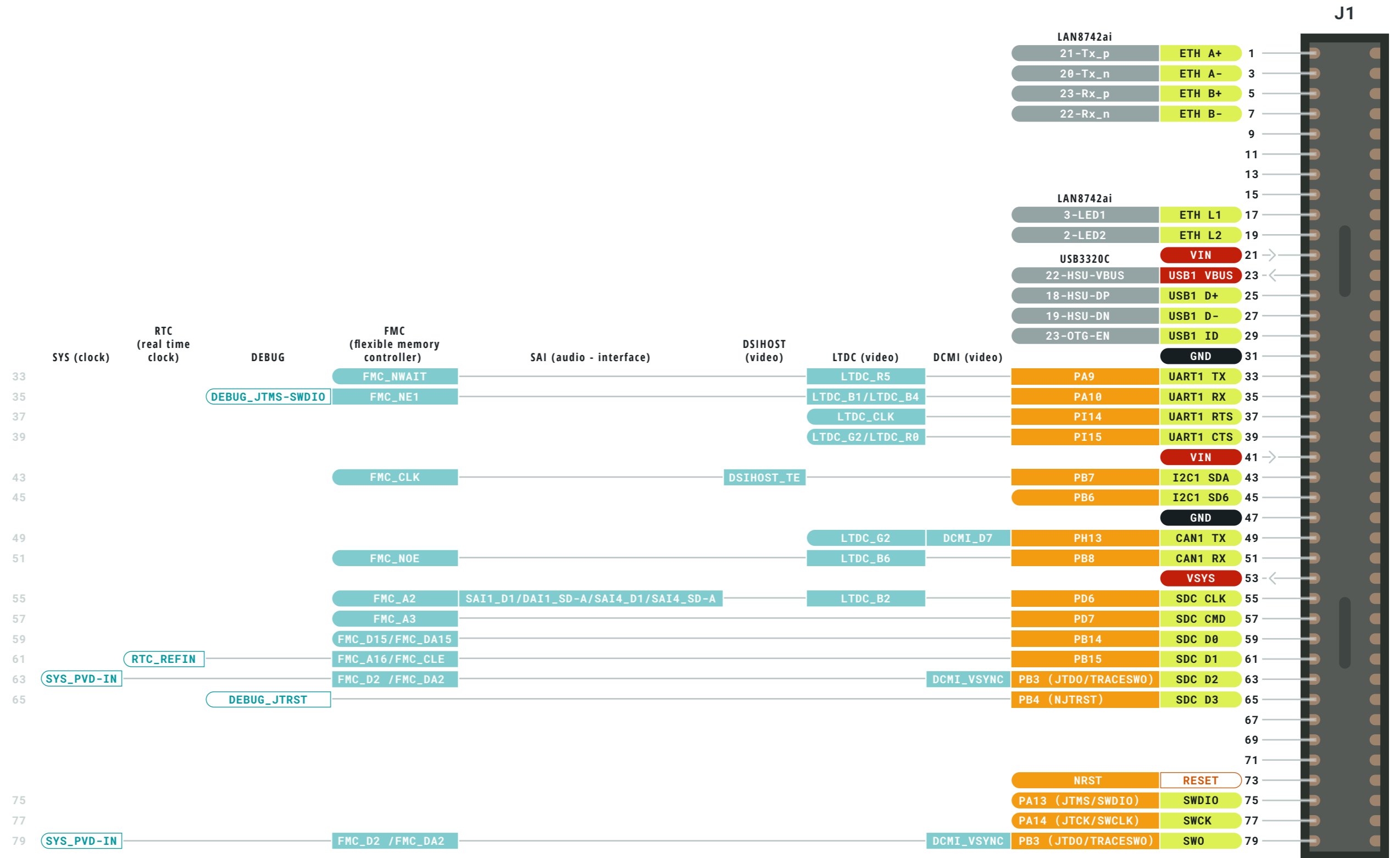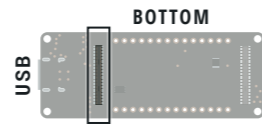Last update: 23/03/2020

J1_odd - Extra/Debug

ARDUINO PORTENTA H7

STORE.ARDUINO.CC/PORTENTA-H7

J1

LAN8742ai			
21-Tx_p	ETH A+	1	
20-Tx_n	ETH A-	3	
23-Rx_p	ETH B+	5	
22-Rx_n	ETH B-	7	
		9	
		11	
		13	
		15	

LAN8742ai			
3-LED1	ETH L1	17	
2-LED2	ETH L2	19	
	VIN	21	

USB3320C			
22-HSU-VBUS	USB1 VBUS	23	
18-HSU-DP	USB1 D+	25	
19-HSU-DN	USB1 D-	27	
23-OTG-EN	USB1 ID	29	
	GND	31	

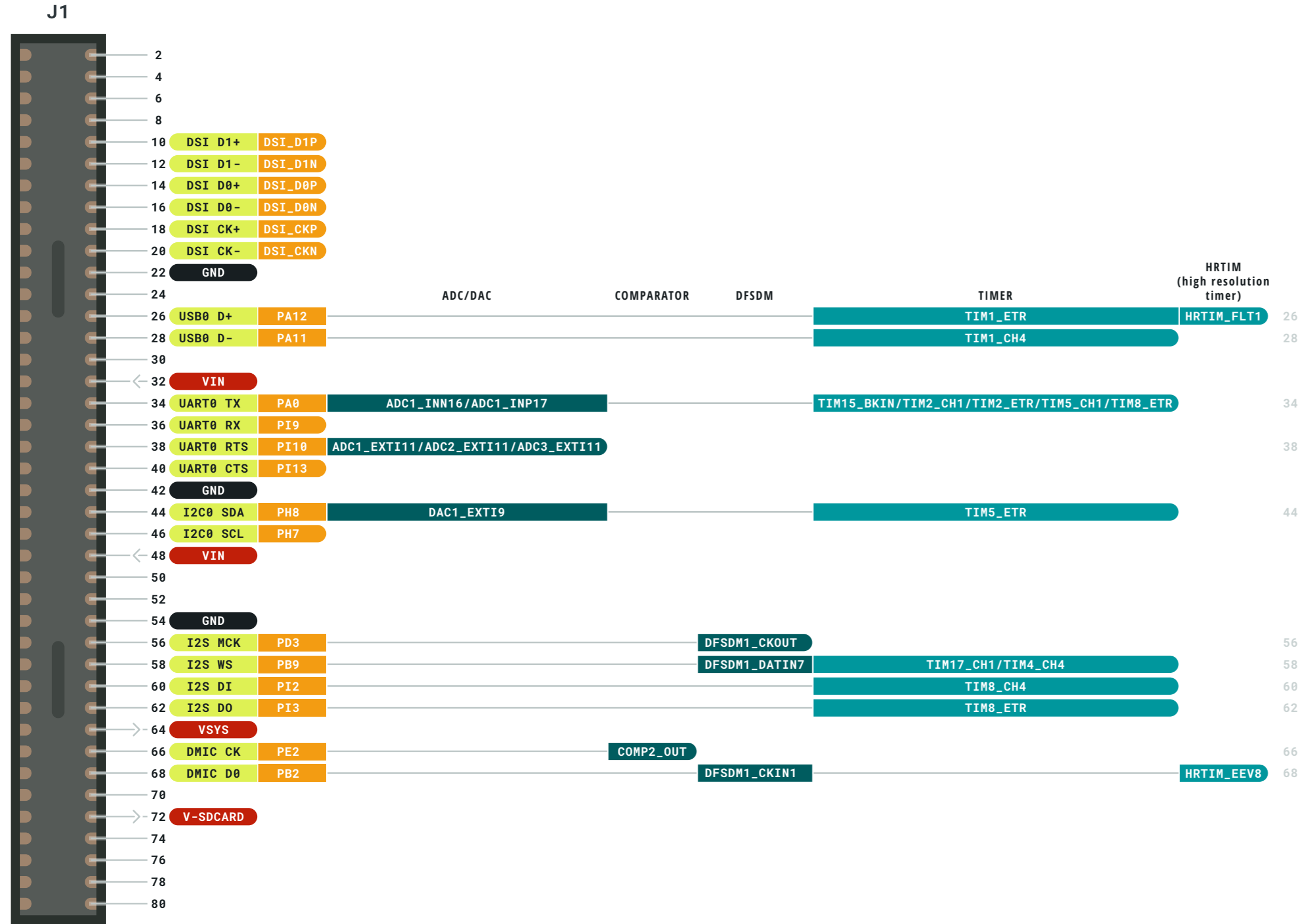|	SYS (clock)	RTC (real time clock)	DEBUG	FMC (flexible memory controller)	SAI (audio - interface)	DSIHOST (video)	LTDC (video)	DCMI (video)			
33				FMC_NWAIT			LTDC_R5		PA9	UART1 TX	33
35			DEBUG_JTMS-SWDIO	FMC_NE1			LTDC_B1/LTDC_B4		PA10	UART1 RX	35
37							LTDC_CLK		PI14	UART1 RTS	37
39							LTDC_G2/LTDC_R0		PI15	UART1 CTS	39
41										VIN	41
43				FMC_CLK		DSIHOST_TE			PB7	I2C1 SDA	43
45									PB6	I2C1 SD6	45
47										GND	47
49							LTDC_G2	DCMI_D7	PH13	CAN1 TX	49
51				FMC_NOE			LTDC_B6		PB8	CAN1 RX	51
53										VSYS	53
55				FMC_A2	SAI1_D1/DAI1_SD-A/SAI4_D1/SAI4_SD-A		LTDC_B2		PD6	SDC CLK	55
57				FMC_A3					PD7	SDC CMD	57
59				FMC_D15/FMC_DA15					PB14	SDC D0	59
61		RTC_REFIN		FMC_A16/FMC_CLE					PB15	SDC D1	61
63		SYS_PVD-IN		FMC_D2 /FMC_DA2				DCMI_VSYNC	PB3 (JTDO/TRACESWO)	SDC D2	63
65			DEBUG_JTRST						PB4 (NJTRST)	SDC D3	65
67											67
69											69
71											71
73									NRST	RESET	73
75									PA13 (JTMS/SWDIO)	SWDIO	75
77									PA14 (JTCK/SWCLK)	SWCK	77
79		SYS_PVD-IN		FMC_D2 /FMC_DA2				DCMI_VSYNC	PB3 (JTDO/TRACESWO)	SWO	79

Legend

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ARDUINO.CC

Last update: 23/03/2020

J1_even - Analog/Timer

J1

Pin			ADC/DAC	COMPARATOR	DFSDM	TIMER	HRTIM (high resolution timer)	
2								
4								
6								
8								
10	DSI D1+	DSI_D1P						
12	DSI D1-	DSI_D1N						
14	DSI D0+	DSI_D0P						
16	DSI D0-	DSI_D0N						
18	DSI CK+	DSI_CKP						
20	DSI CK-	DSI_CKN						
22	GND							
24								
26	USB0 D+	PA12				TIM1_ETR	HRTIM_FLT1	26
28	USB0 D-	PA11				TIM1_CH4		28
30								
32	VIN							
34	UART0 TX	PA0	ADC1_INN16/ADC1_INP17			TIM15_BKIN/TIM2_CH1/TIM2_ETR/TIM5_CH1/TIM8_ETR		34
36	UART0 RX	PI9						
38	UART0 RTS	PI10	ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11					38
40	UART0 CTS	PI13						
42	GND							
44	I2C0 SDA	PH8	DAC1_EXTI9			TIM5_ETR		44
46	I2C0 SCL	PH7						
48	VIN							
50								
52								
54	GND							
56	I2S MCK	PD3			DFSDM1_CKOUT			56
58	I2S WS	PB9			DFSDM1_DATIN7	TIM17_CH1/TIM4_CH4		58
60	I2S DI	PI2				TIM8_CH4		60
62	I2S DO	PI3				TIM8_ETR		62
64	VSYS							
66	DMIC CK	PE2		COMP2_OUT				66
68	DMIC D0	PB2			DFSDM1_CKIN1		HRTIM_EEV8	68
70								
72	V-SDCARD							
74								
76								
78								
80								

Legend:

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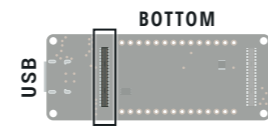**WARNING** Output current sunk by any I/O and control pin is 20 mA

J1_even - Communication
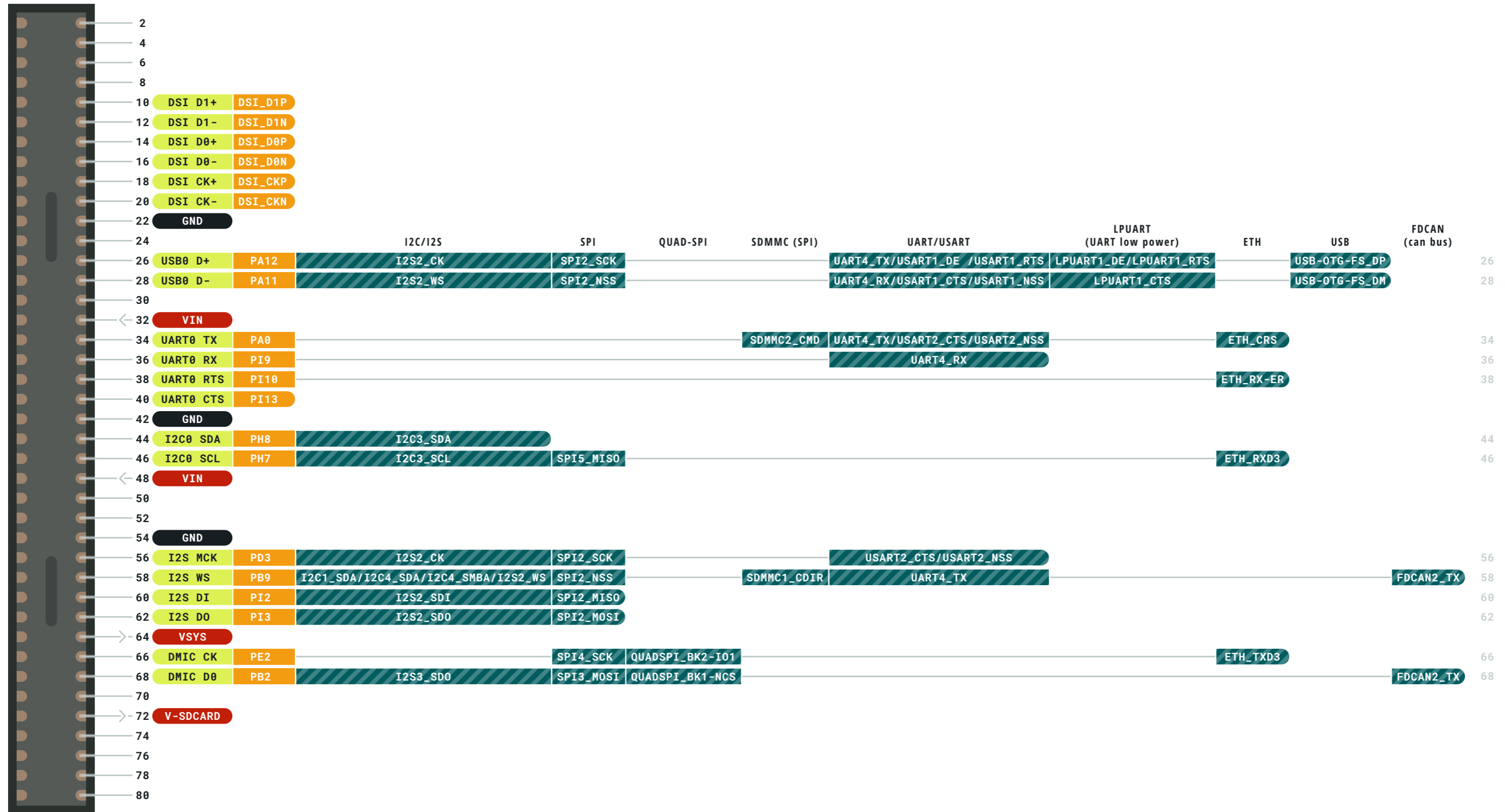
J1

Pin			I2C/I2S	SPI	QUAD-SPI	SDMMC (SPI)	UART/USART	LPUART (UART low power)	ETH	USB	FDCAN (can bus)
2											
4											
6											
8											
10	DSI D1+	DSI_D1P									
12	DSI D1-	DSI_D1N									
14	DSI D0+	DSI_D0P									
16	DSI D0-	DSI_D0N									
18	DSI CK+	DSI_CKP									
20	DSI CK-	DSI_CKN									
22	GND										
24											
26	USB0 D+	PA12	I2S2_CK	SPI2_SCK			UART4_TX/USART1_DE /USART1_RTS	LPUART1_DE/LPUART1_RTS		USB-OTG-FS-DP	26
28	USB0 D-	PA11	I2S2_WS	SPI2_NSS			UART4_RX/USART1_CTS/USART1_NSS	LPUART1_CTS		USB-OTG-FS-DM	28
30											
32	VIN										
34	UART0 TX	PA0				SDMMC2_CMD	UART4_TX/USART2_CTS/USART2_NSS		ETH_CRS		34
36	UART0 RX	PI9					UART4_RX				36
38	UART0 RTS	PI10							ETH_RX-ER		38
40	UART0 CTS	PI13									
42	GND										
44	I2C0 SDA	PH8	I2C3_SDA								44
46	I2C0 SCL	PH7	I2C3_SCL	SPI5_MISO					ETH_RXD3		46
48	VIN										
50											
52											
54	GND										
56	I2S MCK	PD3	I2S2_CK	SPI2_SCK			USART2_CTS/USART2_NSS				56
58	I2S WS	PB9	I2C1_SDA/I2C4_SDA/I2C4_SMBA/I2S2_WS	SPI2_NSS		SDMMC1_CDIR	UART4_TX				FDCAN2_TX 58
60	I2S DI	PI2	I2S2_SDI	SPI2_MISO							60
62	I2S DO	PI3	I2S2_SDO	SPI2_MOSI							62
64	VSYS										
66	DMIC CK	PE2		SPI4_SCK	QUADSPI_BK2-IO1				ETH_TXD3		66
68	DMIC D0	PB2	I2S3_SDO	SPI3_MOSI	QUADSPI_BK1-NCS						FDCAN2_TX 68
70											
72	V-SDCARD										
74											
76											
78											
80											

Legend

- **Ground**
- **Power**
- **LED**
- **Internal Pin**
- **SWD Pin**
- **Digital Pin**
- **Analog Pin**
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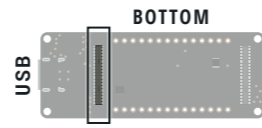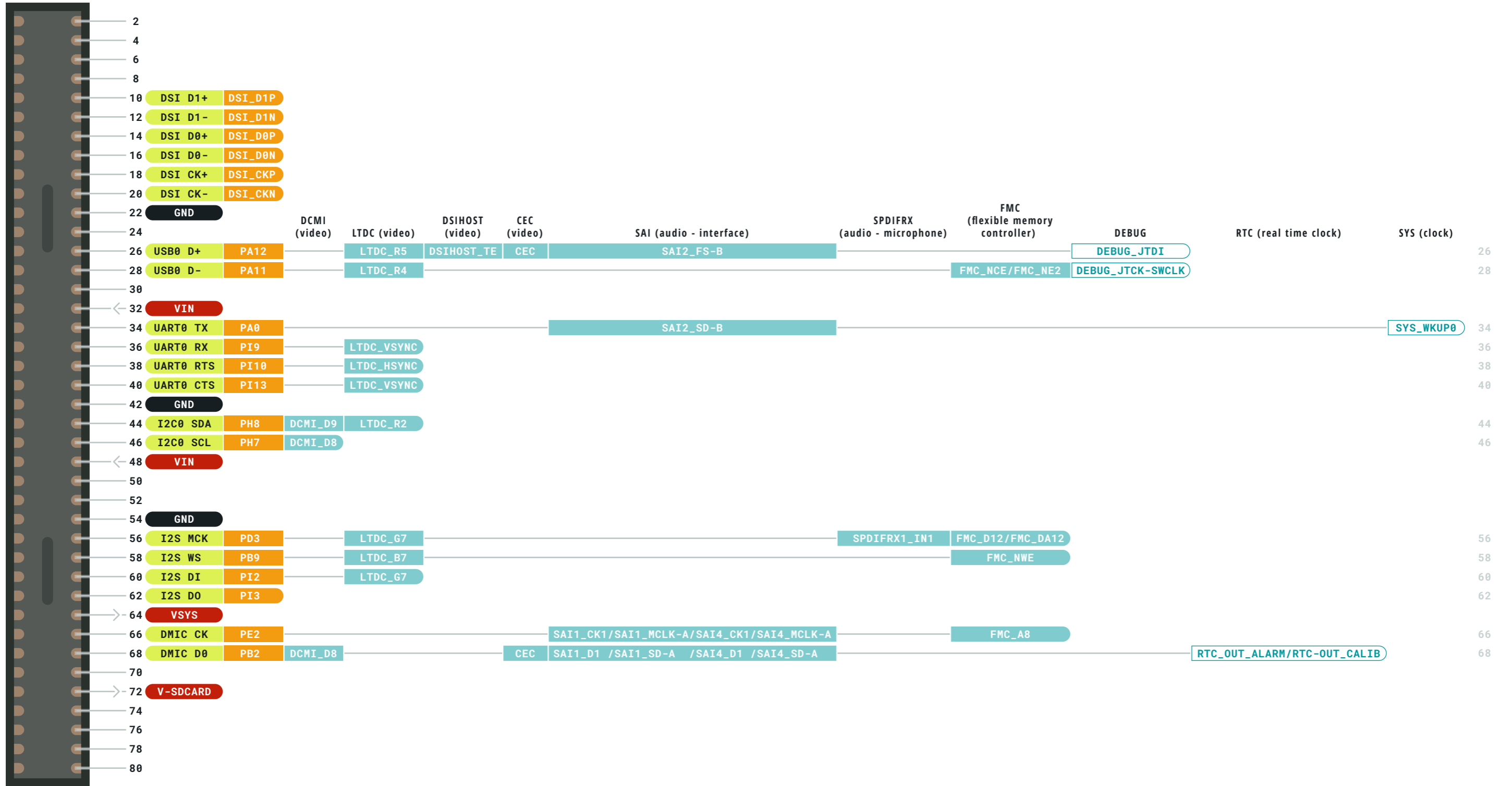⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

J1

Pin			DCMI (video)	LTDC (video)	DSIHOST (video)	CEC (video)	SAI (audio - interface)	SPDIFRX (audio - microphone)	FMC (flexible memory controller)	DEBUG	RTC (real time clock)	SYS (clock)
2												
4												
6												
8												
10	DSI D1+	DSI_D1P										
12	DSI D1-	DSI_D1N										
14	DSI D0+	DSI_D0P										
16	DSI D0-	DSI_D0N										
18	DSI CK+	DSI_CKP										
20	DSI CK-	DSI_CKN										
22	GND											
24												
26	USB0 D+	PA12		LTDC_R5	DSIHOST_TE	CEC	SAI2_FS-B			DEBUG_JTDI		26
28	USB0 D-	PA11		LTDC_R4					FMC_NCE/FMC_NE2	DEBUG_JTCK-SWCLK		28
30												
32	VIN											
34	UART0 TX	PA0					SAI2_SD-B					SYS_WKUP0	34
36	UART0 RX	PI9		LTDC_VSYNC								36
38	UART0 RTS	PI10		LTDC_HSYNC								38
40	UART0 CTS	PI13		LTDC_VSYNC								40
42	GND											
44	I2C0 SDA	PH8	DCMI_D9	LTDC_R2								44
46	I2C0 SCL	PH7	DCMI_D8									46
48	VIN											
50												
52												
54	GND											
56	I2S MCK	PD3		LTDC_G7				SPDIFRX1_IN1	FMC_D12/FMC_DA12			56
58	I2S WS	PB9		LTDC_B7					FMC_NWE			58
60	I2S DI	PI2		LTDC_G7								60
62	I2S DO	PI3										62
64	VSYS											
66	DMIC CK	PE2					SAI1_CK1/SAI1_MCLK-A/SAI4_CK1/SAI4_MCLK-A		FMC_A8			66
68	DMIC D0	PB2	DCMI_D8			CEC	SAI1_D1 /SAI1_SD-A /SAI4_D1 /SAI4_SD-A				RTC_OUT_ALARM/RTC-OUT_CALIB	68
70												
72	V-SDCARD											
74												
76												
78												
80												

Legend:

- Ground
- Power
- LED
- Internal Pin
- SWD Pin
- Digital Pin
- Analog Pin
- Other Pin
- Microcontroller's Port
- Default
- High Density Connector
- Analog
- Communication
- Timer
- Extra Features
- Debug

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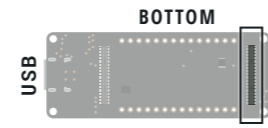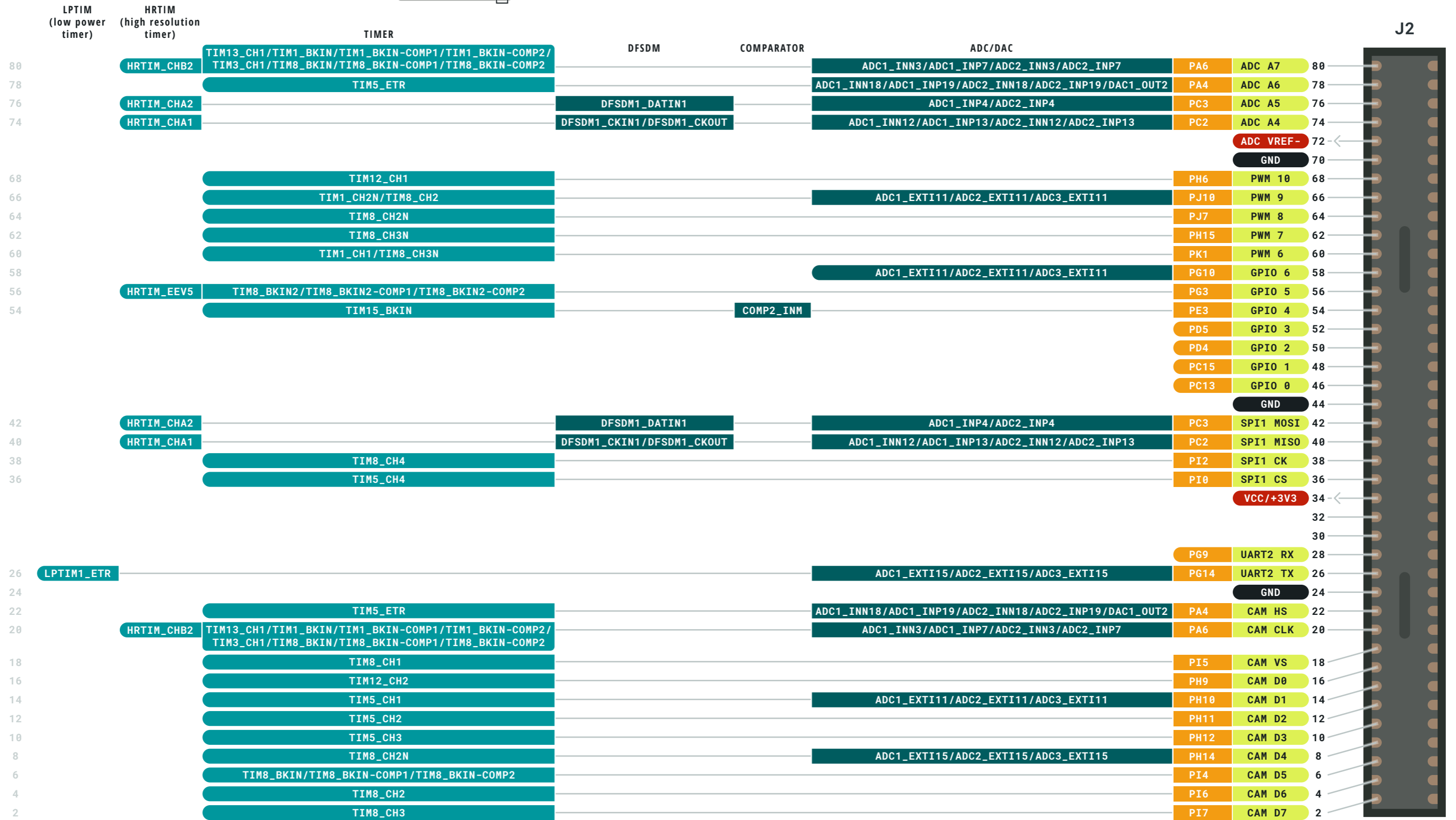⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

J2_even - Analog/Timer

J2

LPTIM (low power timer)	HRTIM (high resolution timer)	TIMER	DFSDM	COMPARATOR	ADC/DAC	Port	Name	Pin
80	HRTIM_CHB2	TIM13_CH1/TIM1_BKIN/TIM1_BKIN-COMP1/TIM1_BKIN-COMP2/ TIM3_CH1/TIM8_BKIN/TIM8_BKIN-COMP1/TIM8_BKIN-COMP2			ADC1_INN3/ADC1_INP7/ADC2_INN3/ADC2_INP7	PA6	ADC A7	80
78		TIM5_ETR			ADC1_INN18/ADC1_INP19/ADC2_INN18/ADC2_INP19/DAC1_OUT2	PA4	ADC A6	78
76	HRTIM_CHA2		DFSDM1_DATIN1		ADC1_INP4/ADC2_INP4	PC3	ADC A5	76
74	HRTIM_CHA1		DFSDM1_CKIN1/DFSDM1_CKOUT		ADC1_INN12/ADC1_INP13/ADC2_INN12/ADC2_INP13	PC2	ADC A4	74
							ADC VREF-	72
							GND	70
68		TIM12_CH1				PH6	PWM 10	68
66		TIM1_CH2N/TIM8_CH2			ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11	PJ10	PWM 9	66
64		TIM8_CH2N				PJ7	PWM 8	64
62		TIM8_CH3N				PH15	PWM 7	62
60		TIM1_CH1/TIM8_CH3N				PK1	PWM 6	60
58					ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11	PG10	GPIO 6	58
56	HRTIM_EEV5	TIM8_BKIN2/TIM8_BKIN2-COMP1/TIM8_BKIN2-COMP2				PG3	GPIO 5	56
54		TIM15_BKIN		COMP2_INM		PE3	GPIO 4	54
						PD5	GPIO 3	52
						PD4	GPIO 2	50
						PC15	GPIO 1	48
						PC13	GPIO 0	46
							GND	44
42	HRTIM_CHA2		DFSDM1_DATIN1		ADC1_INP4/ADC2_INP4	PC3	SPI1 MOSI	42
40	HRTIM_CHA1		DFSDM1_CKIN1/DFSDM1_CKOUT		ADC1_INN12/ADC1_INP13/ADC2_INN12/ADC2_INP13	PC2	SPI1 MISO	40
38		TIM8_CH4				PI2	SPI1 CK	38
36		TIM5_CH4				PI0	SPI1 CS	36
							VCC/+3V3	34
								32
								30
							PG9	UART2 RX	28
26	LPTIM1_ETR				ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15	PG14	UART2 TX	26
24							GND	24
22		TIM5_ETR			ADC1_INN18/ADC1_INP19/ADC2_INN18/ADC2_INP19/DAC1_OUT2	PA4	CAM HS	22
20	HRTIM_CHB2	TIM13_CH1/TIM1_BKIN/TIM1_BKIN-COMP1/TIM1_BKIN-COMP2/ TIM3_CH1/TIM8_BKIN/TIM8_BKIN-COMP1/TIM8_BKIN-COMP2			ADC1_INN3/ADC1_INP7/ADC2_INN3/ADC2_INP7	PA6	CAM CLK	20
18		TIM8_CH1				PI5	CAM VS	18
16		TIM12_CH2				PH9	CAM D0	16
14		TIM5_CH1			ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11	PH10	CAM D1	14
12		TIM5_CH2				PH11	CAM D2	12
10		TIM5_CH3				PH12	CAM D3	10
8		TIM8_CH2N			ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15	PH14	CAM D4	8
6		TIM8_BKIN/TIM8_BKIN-COMP1/TIM8_BKIN-COMP2				PI4	CAM D5	6
4		TIM8_CH2				PI6	CAM D6	4
2		TIM8_CH3				PI7	CAM D7	2

Legend

- ■ Ground
- ■ Power
- ■ LED
- ■ Internal Pin
- ■ SWD Pin
- ▨ Digital Pin
- ▨ Analog Pin
- ▢ Other Pin
- ■ Microcontroller's Port
- ■ Default
- ■ High Density Connector
- ■ Analog
- ▨ Communication
- ■ Timer
- ▢ Extra Features
- ▢ Debug

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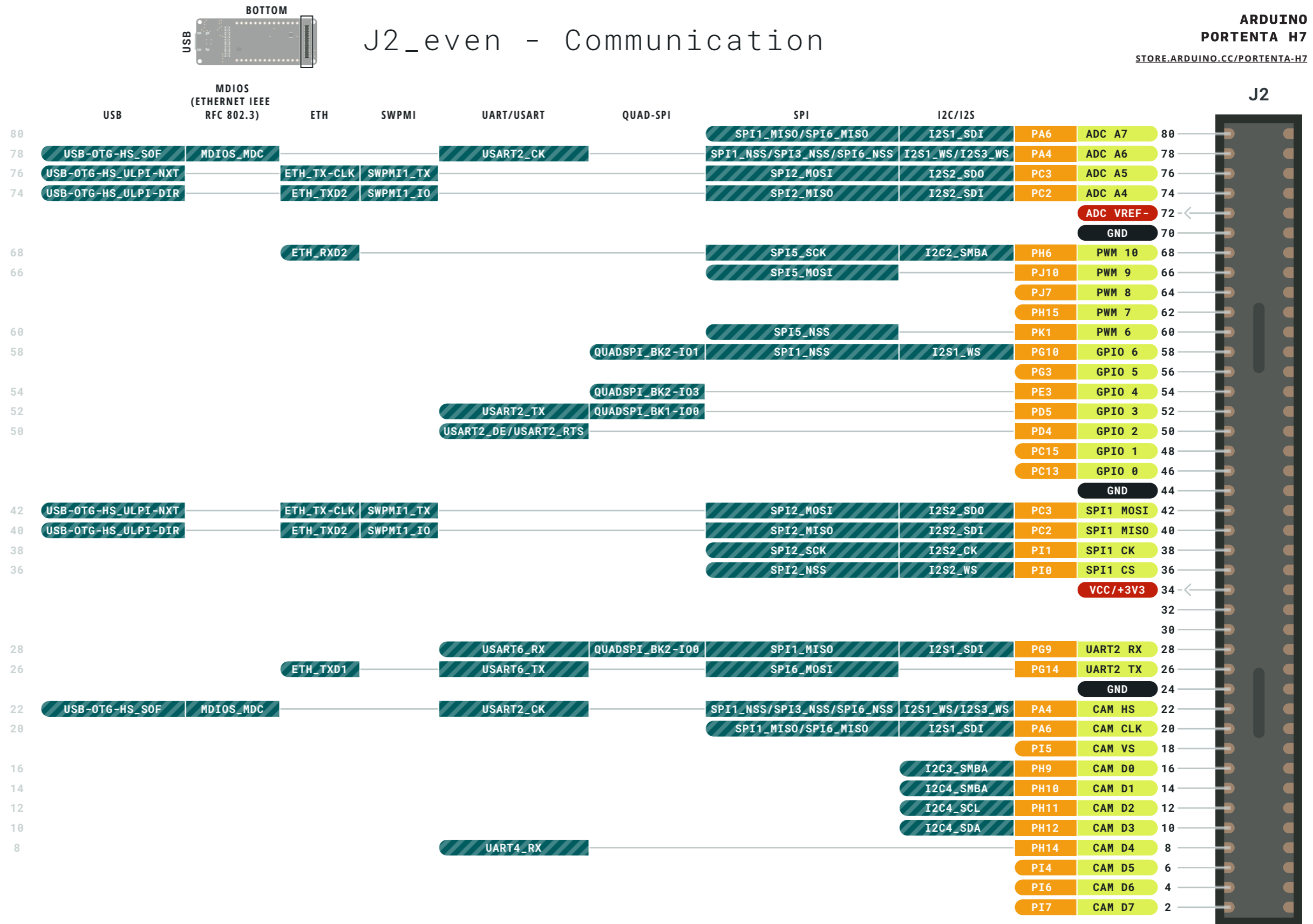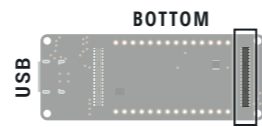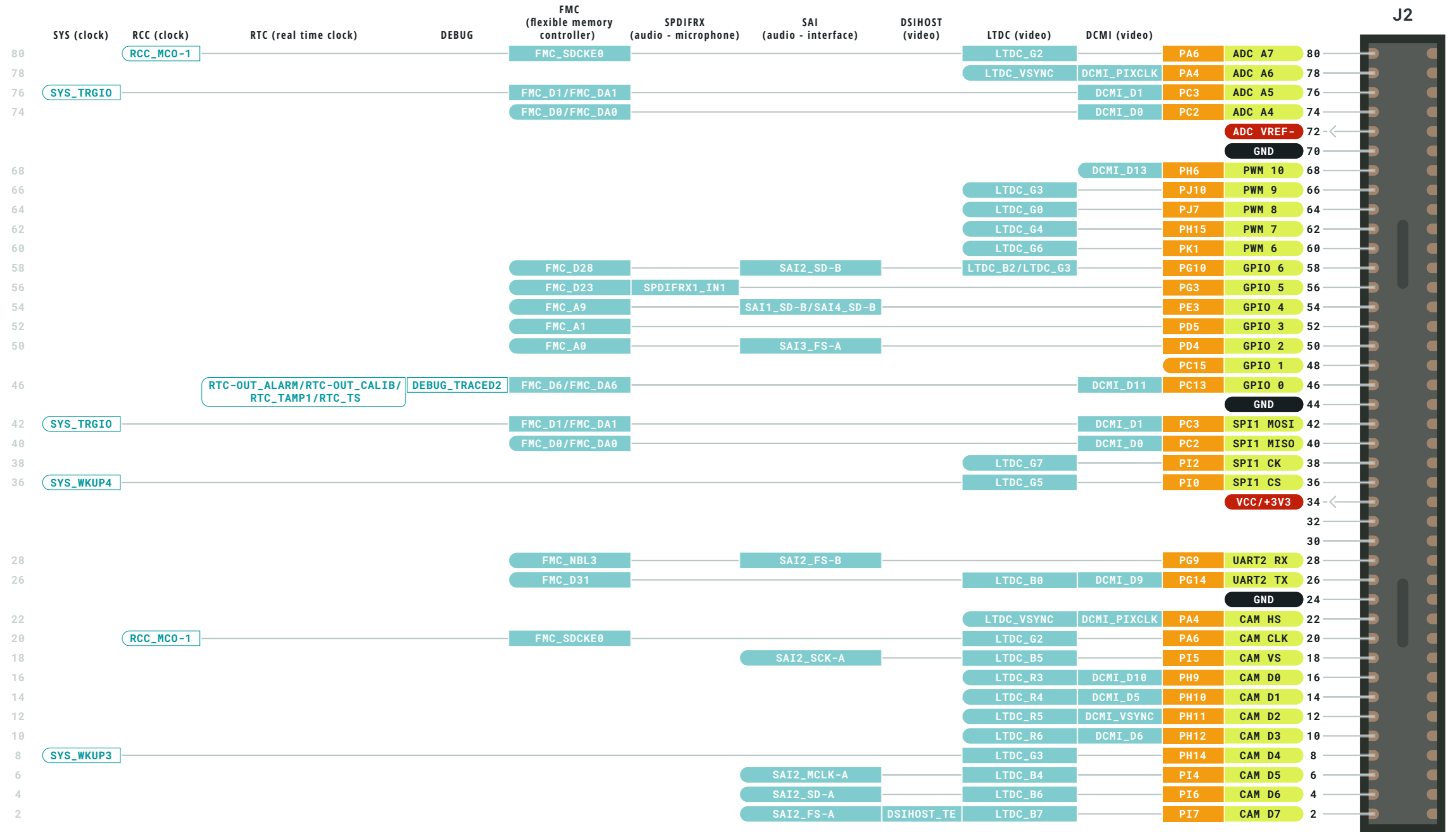⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

BOTTOM

USB

MDIOS
(ETHERNET IEEE
RFC 802.3)

J2_even - Communication

**ARDUINO
PORTENTA H7**

STORE.ARDUINO.CC/PORTENTA-H7

J2

	USB	MDIOS (ETHERNET IEEE RFC 802.3)	ETH	SWPMI	UART/USART	QUAD-SPI	SPI	I2C/I2S			
80							SPI1_MISO/SPI6_MISO	I2S1_SDI	PA6	ADC A7	80
78	USB-OTG-HS_SOF	MDIOS_MDC			USART2_CK		SPI1_NSS/SPI3_NSS/SPI6_NSS	I2S1_WS/I2S3_WS	PA4	ADC A6	78
76	USB-OTG-HS_ULPI-NXT		ETH_TX-CLK	SWPMI1_TX			SPI2_MOSI	I2S2_SDO	PC3	ADC A5	76
74	USB-OTG-HS_ULPI-DIR		ETH_TXD2	SWPMI1_IO			SPI2_MISO	I2S2_SDI	PC2	ADC A4	74
72										ADC VREF-	72
70										GND	70
68			ETH_RXD2				SPI5_SCK	I2C2_SMBA	PH6	PWM 10	68
66							SPI5_MOSI		PJ10	PWM 9	66
64									PJ7	PWM 8	64
62									PH15	PWM 7	62
60							SPI5_NSS		PK1	PWM 6	60
58						QUADSPI_BK2-IO1	SPI1_NSS	I2S1_WS	PG10	GPIO 6	58
56									PG3	GPIO 5	56
54						QUADSPI_BK2-IO3			PE3	GPIO 4	54
52					USART2_TX	QUADSPI_BK1-IO0			PD5	GPIO 3	52
50					USART2_DE/USART2_RTS				PD4	GPIO 2	50
48									PC15	GPIO 1	48
46									PC13	GPIO 0	46
44										GND	44
42	USB-OTG-HS_ULPI-NXT		ETH_TX-CLK	SWPMI1_TX			SPI2_MOSI	I2S2_SDO	PC3	SPI1 MOSI	42
40	USB-OTG-HS_ULPI-DIR		ETH_TXD2	SWPMI1_IO			SPI2_MISO	I2S2_SDI	PC2	SPI1 MISO	40
38							SPI2_SCK	I2S2_CK	PI1	SPI1 CK	38
36							SPI2_NSS	I2S2_WS	PI0	SPI1 CS	36
34										VCC/+3V3	34
32											32
30											30
28					USART6_RX	QUADSPI_BK2-IO0	SPI1_MISO	I2S1_SDI	PG9	UART2 RX	28
26			ETH_TXD1		USART6_TX		SPI6_MOSI		PG14	UART2 TX	26
24										GND	24
22	USB-OTG-HS_SOF	MDIOS_MDC			USART2_CK		SPI1_NSS/SPI3_NSS/SPI6_NSS	I2S1_WS/I2S3_WS	PA4	CAM HS	22
20							SPI1_MISO/SPI6_MISO	I2S1_SDI	PA6	CAM CLK	20
18									PI5	CAM VS	18
16								I2C3_SMBA	PH9	CAM D0	16
14								I2C4_SMBA	PH10	CAM D1	14
12								I2C4_SCL	PH11	CAM D2	12
10								I2C4_SDA	PH12	CAM D3	10
8					UART4_RX				PH14	CAM D4	8
6									PI4	CAM D5	6
4									PI6	CAM D6	4
2									PI7	CAM D7	2

Legend:

- ■ Ground
- ■ Power
- ■ LED
- ■ Internal Pin
- ■ SWD Pin
- ▨ Digital Pin
- ▨ Analog Pin
- ▢ Other Pin
- ■ Microcontroller's Port
- ■ Default
- ■ High Density Connector
- ■ Analog
- ▨ Communication
- ■ Timer
- ■ Extra Features
- ▢ Debug

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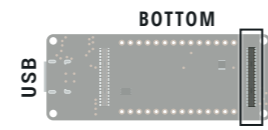⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

J2_even - Extra/Debug

J2

Column headers:

SYS (clock) | RCC (clock) | RTC (real time clock) | DEBUG | FMC (flexible memory controller) | SPDIFRX (audio - microphone) | SAI (audio - interface) | DSIHOST (video) | LTDC (video) | DCMI (video)

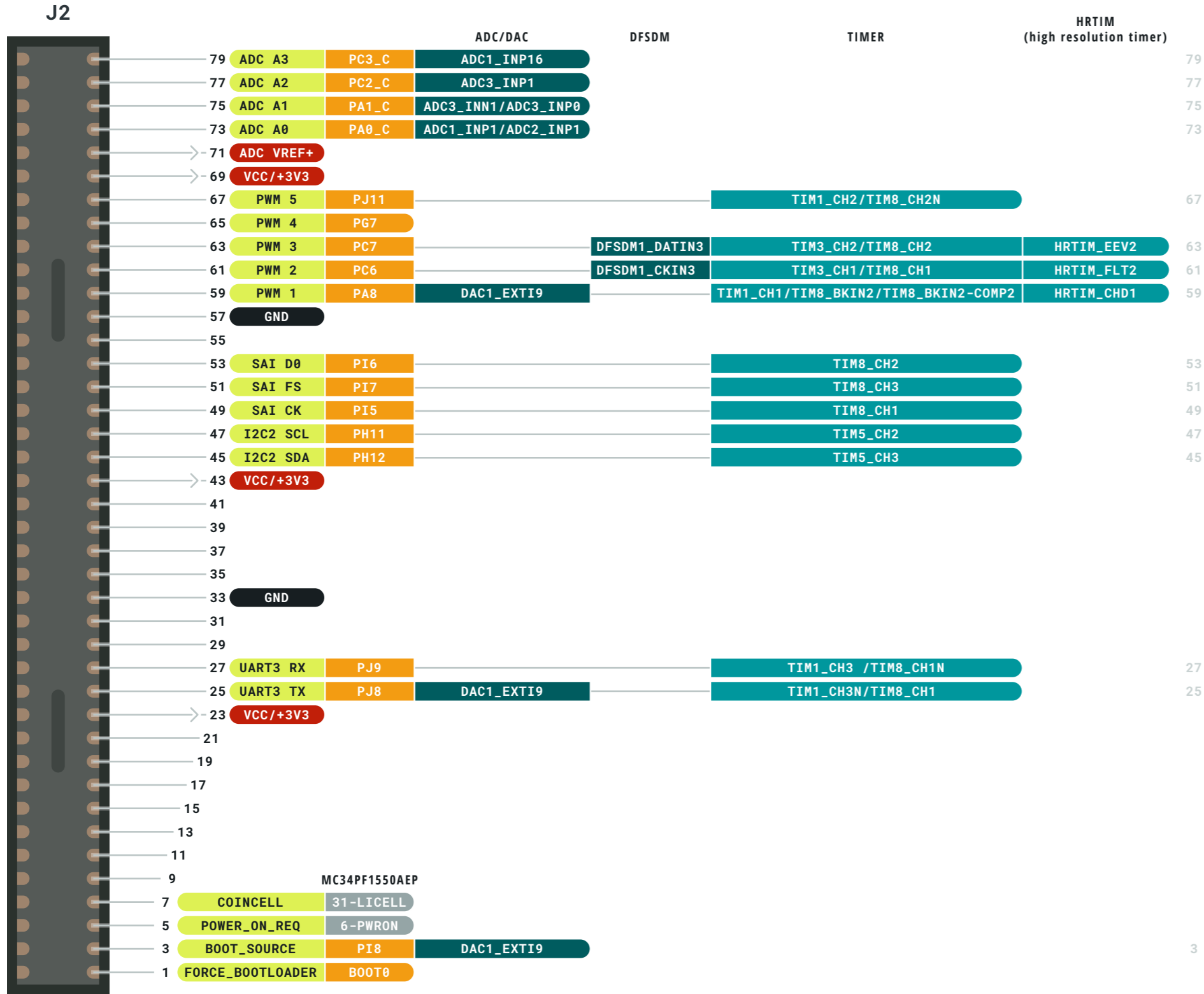| #	SYS	RCC	RTC	DEBUG	FMC	SPDIFRX	SAI	DSIHOST	LTDC	DCMI	Port	Function	#
80		RCC_MCO-1			FMC_SDCKE0				LTDC_G2		PA6	ADC A7	80
78									LTDC_VSYNC	DCMI_PIXCLK	PA4	ADC A6	78
76	SYS_TRGIO				FMC_D1/FMC_DA1					DCMI_D1	PC3	ADC A5	76
74					FMC_D0/FMC_DA0					DCMI_D0	PC2	ADC A4	74
72												ADC VREF-	72
70												GND	70
68										DCMI_D13	PH6	PWM 10	68
66									LTDC_G3		PJ10	PWM 9	66
64									LTDC_G0		PJ7	PWM 8	64
62									LTDC_G4		PH15	PWM 7	62
60									LTDC_G6		PK1	PWM 6	60
58					FMC_D28		SAI2_SD-B		LTDC_B2/LTDC_G3		PG10	GPIO 6	58
56					FMC_D23	SPDIFRX1_IN1					PG3	GPIO 5	56
54					FMC_A9		SAI1_SD-B/SAI4_SD-B				PE3	GPIO 4	54
52					FMC_A1						PD5	GPIO 3	52
50					FMC_A0		SAI3_FS-A				PD4	GPIO 2	50
48											PC15	GPIO 1	48
46			RTC-OUT_ALARM/RTC-OUT_CALIB/ RTC_TAMP1/RTC_TS	DEBUG_TRACED2	FMC_D6/FMC_DA6					DCMI_D11	PC13	GPIO 0	46
44												GND	44
42	SYS_TRGIO				FMC_D1/FMC_DA1					DCMI_D1	PC3	SPI1 MOSI	42
40					FMC_D0/FMC_DA0					DCMI_D0	PC2	SPI1 MISO	40
38									LTDC_G7		PI2	SPI1 CK	38
36	SYS_WKUP4								LTDC_G5		PI0	SPI1 CS	36
34												VCC/+3V3	34
32													32
30													30
28					FMC_NBL3		SAI2_FS-B				PG9	UART2 RX	28
26					FMC_D31				LTDC_B0	DCMI_D9	PG14	UART2 TX	26
24												GND	24
22									LTDC_VSYNC	DCMI_PIXCLK	PA4	CAM HS	22
20		RCC_MCO-1			FMC_SDCKE0				LTDC_G2		PA6	CAM CLK	20
18							SAI2_SCK-A		LTDC_B5		PI5	CAM VS	18
16									LTDC_R3	DCMI_D10	PH9	CAM D0	16
14									LTDC_R4	DCMI_D5	PH10	CAM D1	14
12									LTDC_R5	DCMI_VSYNC	PH11	CAM D2	12
10									LTDC_R6	DCMI_D6	PH12	CAM D3	10
8	SYS_WKUP3								LTDC_G3		PH14	CAM D4	8
6							SAI2_MCLK-A		LTDC_B4		PI4	CAM D5	6
4							SAI2_SD-A		LTDC_B6		PI6	CAM D6	4
2							SAI2_FS-A	DSIHOST_TE	LTDC_B7		PI7	CAM D7	2

Legend

- Ground
- Power
- LED
- Internal Pin
- SWD Pin
- Digital Pin
- Analog Pin
- Other Pin
- Microcontroller's Port
- Default
- High Density Connector
- Analog
- Communication
- Timer
- Debug

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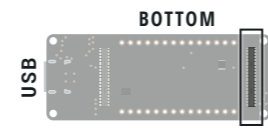⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

BOTTOM
USB

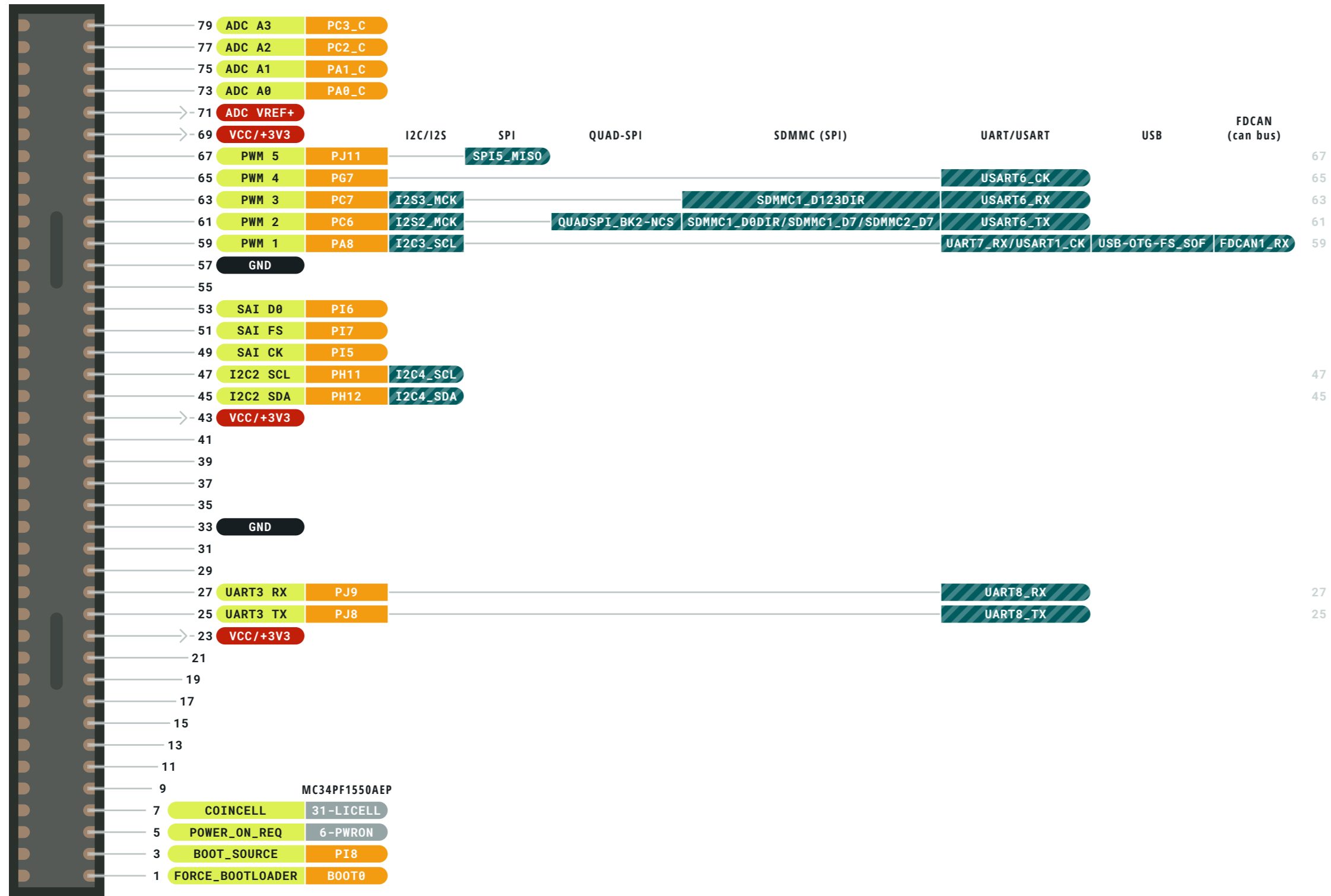# J2_odd - Analog/Timer

**ARDUINO
PORTENTA H7**

STORE.ARDUINO.CC/PORTENTA-H7

J2

		ADC/DAC	DFSDM	TIMER	HRTIM (high resolution timer)	
79 ADC A3	PC3_C	ADC1_INP16				79
77 ADC A2	PC2_C	ADC3_INP1				77
75 ADC A1	PA1_C	ADC3_INN1/ADC3_INP0				75
73 ADC A0	PA0_C	ADC1_INP1/ADC2_INP1				73
71 ADC VREF+						
69 VCC/+3V3						
67 PWM 5	PJ11			TIM1_CH2/TIM8_CH2N		67
65 PWM 4	PG7					
63 PWM 3	PC7		DFSDM1_DATIN3	TIM3_CH2/TIM8_CH2	HRTIM_EEV2	63
61 PWM 2	PC6		DFSDM1_CKIN3	TIM3_CH1/TIM8_CH1	HRTIM_FLT2	61
59 PWM 1	PA8	DAC1_EXTI9		TIM1_CH1/TIM8_BKIN2/TIM8_BKIN2-COMP2	HRTIM_CHD1	59
57 GND						
55						
53 SAI D0	PI6			TIM8_CH2		53
51 SAI FS	PI7			TIM8_CH3		51
49 SAI CK	PI5			TIM8_CH1		49
47 I2C2 SCL	PH11			TIM5_CH2		47
45 I2C2 SDA	PH12			TIM5_CH3		45
43 VCC/+3V3						
41						
39						
37						
35						
33 GND						
31						
29						
27 UART3 RX	PJ9			TIM1_CH3 /TIM8_CH1N		27
25 UART3 TX	PJ8	DAC1_EXTI9		TIM1_CH3N/TIM8_CH1		25
23 VCC/+3V3						
21						
19						
17						
15						
13						
11						
9		MC34PF1550AEP				
7 COINCELL	31-LICELL					
5 POWER_ON_REQ	6-PWRON					
3 BOOT_SOURCE	PI8	DAC1_EXTI9				3
1 FORCE_BOOTLOADER	BOOT0					

Color	Legend		Color	Legend		Color	Legend
	Ground			Digital Pin			Analog
	Power			Analog Pin			Communication
	LED			Other Pin			Timer
	Internal Pin			Microcontroller's Port			Extra Features
	SWD Pin			Default			Debug
				High Density Connector			

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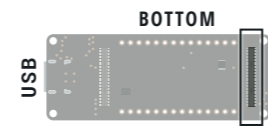⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

J2

Pin	Name	Port	I2C/I2S	SPI	QUAD-SPI	SDMMC (SPI)	UART/USART	USB	FDCAN (can bus)	
79	ADC A3	PC3_C								
77	ADC A2	PC2_C								
75	ADC A1	PA1_C								
73	ADC A0	PA0_C								
71	ADC VREF+									
69	VCC/+3V3									
67	PWM 5	PJ11		SPI5_MISO						67
65	PWM 4	PG7					USART6_CK			65
63	PWM 3	PC7	I2S3_MCK			SDMMC1_D123DIR	USART6_RX			63
61	PWM 2	PC6	I2S2_MCK		QUADSPI_BK2-NCS	SDMMC1_D0DIR/SDMMC1_D7/SDMMC2_D7	USART6_TX			61
59	PWM 1	PA8	I2C3_SCL				UART7_RX/USART1_CK	USB-OTG-FS_SOF	FDCAN1_RX	59
57	GND									
55										
53	SAI D0	PI6								
51	SAI FS	PI7								
49	SAI CK	PI5								
47	I2C2 SCL	PH11	I2C4_SCL							47
45	I2C2 SDA	PH12	I2C4_SDA							45
43	VCC/+3V3									
41										
39										
37										
35										
33	GND									
31										
29										
27	UART3 RX	PJ9					UART8_RX			27
25	UART3 TX	PJ8					UART8_TX			25
23	VCC/+3V3									
21										
19										
17										
15										
13										
11										
9										
7	COINCELL	31-LICELL								
5	POWER_ON_REQ	6-PWRON								
3	BOOT_SOURCE	PI8								
1	FORCE_BOOTLOADER	BOOT0								

MC34PF1550AEP

Legend

- ■ Ground
- ■ Power
- ■ LED
- ■ Internal Pin
- ■ SWD Pin
- ▨ Digital Pin
- ▢ Analog Pin
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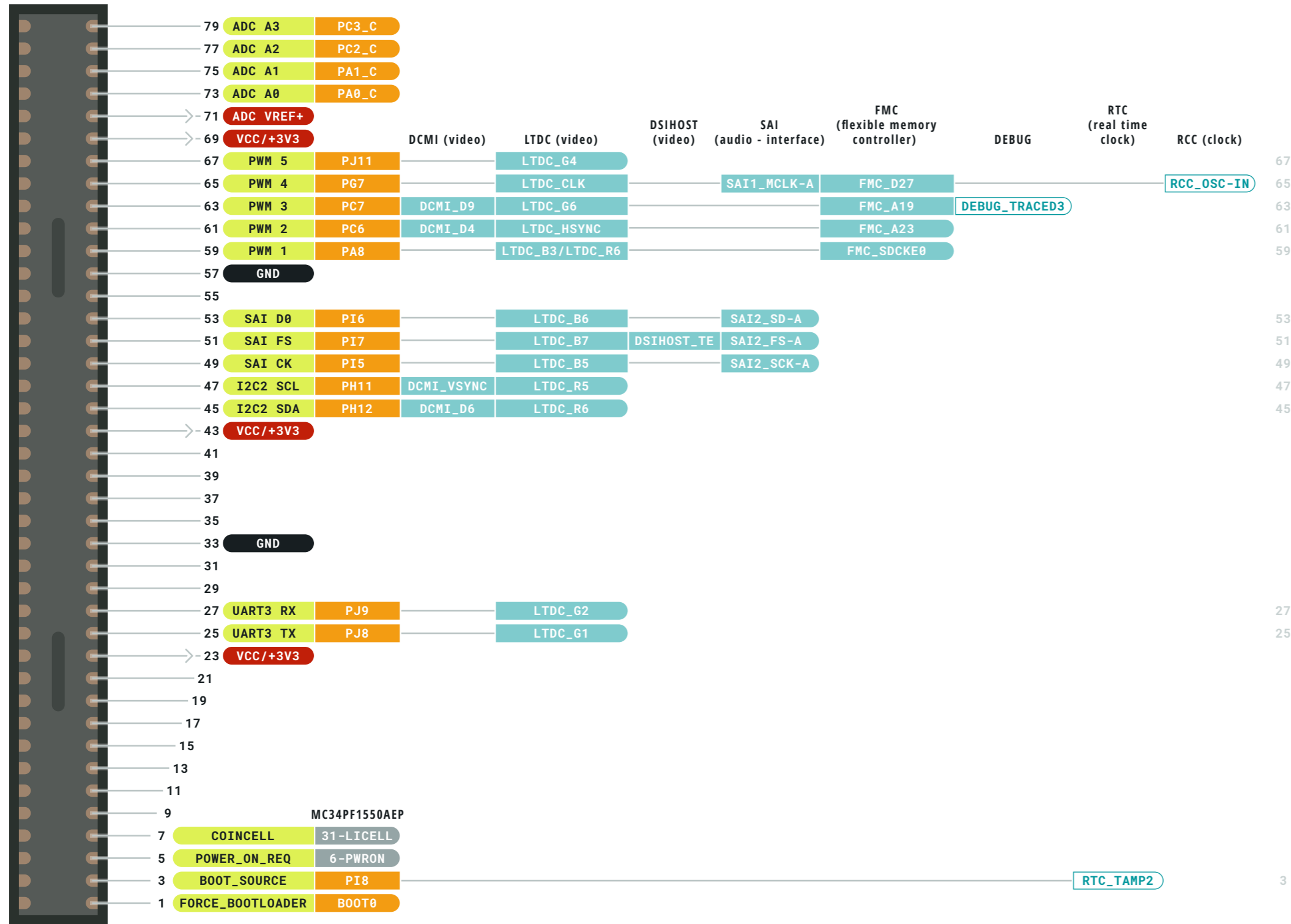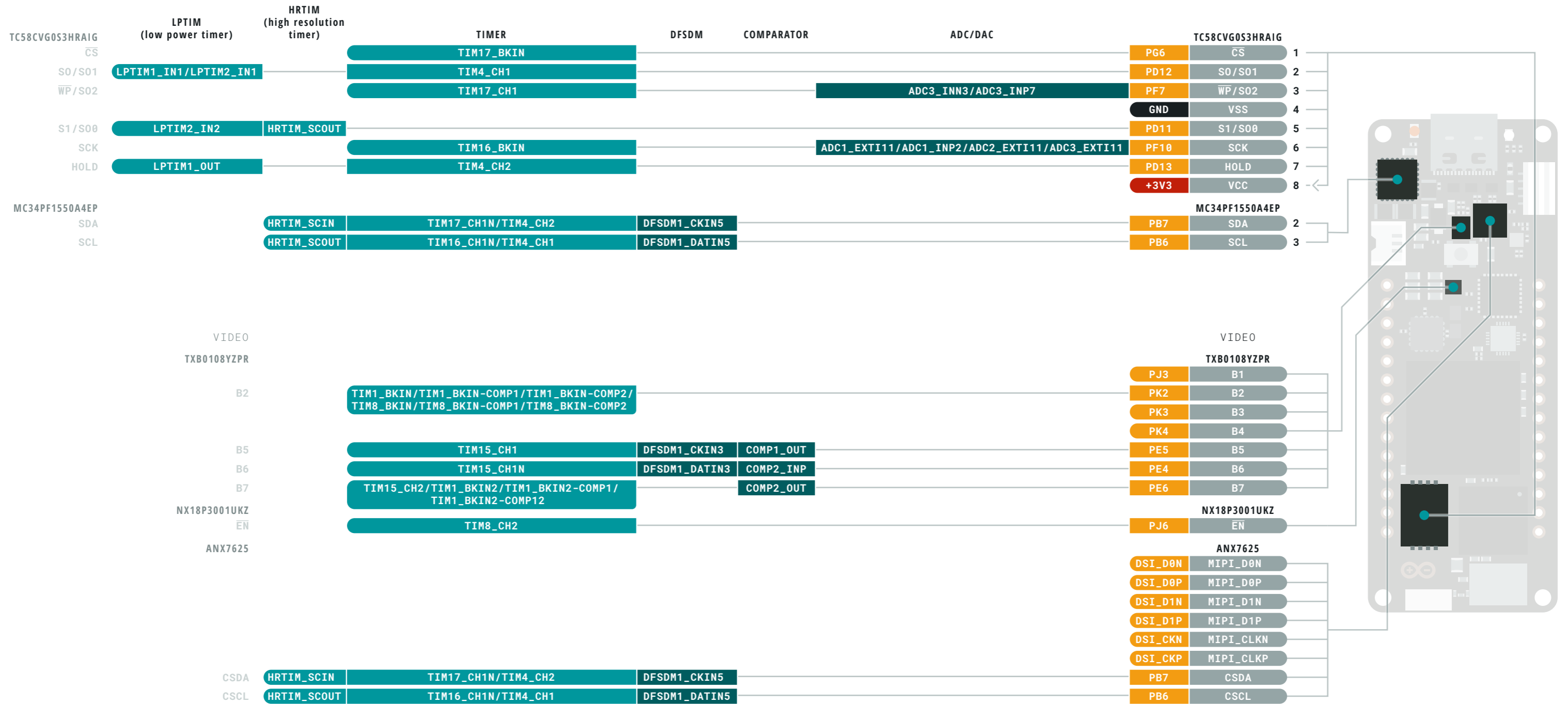⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

BOTTOM

USB

J2_odd   - Extra/Debug

ARDUINO
PORTENTA H7

STORE.ARDUINO.CC/PORTENTA-H7

J2

Pin			DCMI (video)	LTDC (video)	DSIHOST (video)	SAI (audio - interface)	FMC (flexible memory controller)	DEBUG	RTC (real time clock)	RCC (clock)	
79	ADC A3	PC3_C									
77	ADC A2	PC2_C									
75	ADC A1	PA1_C									
73	ADC A0	PA0_C									
71	ADC VREF+										
69	VCC/+3V3										
67	PWM 5	PJ11		LTDC_G4							67
65	PWM 4	PG7		LTDC_CLK		SAI1_MCLK-A	FMC_D27			RCC_OSC-IN	65
63	PWM 3	PC7	DCMI_D9	LTDC_G6			FMC_A19	DEBUG_TRACED3			63
61	PWM 2	PC6	DCMI_D4	LTDC_HSYNC			FMC_A23				61
59	PWM 1	PA8		LTDC_B3/LTDC_R6			FMC_SDCKE0				59
57	GND										
55											
53	SAI D0	PI6		LTDC_B6		SAI2_SD-A					53
51	SAI FS	PI7		LTDC_B7	DSIHOST_TE	SAI2_FS-A					51
49	SAI CK	PI5		LTDC_B5		SAI2_SCK-A					49
47	I2C2 SCL	PH11	DCMI_VSYNC	LTDC_R5							47
45	I2C2 SDA	PH12	DCMI_D6	LTDC_R6							45
43	VCC/+3V3										
41											
39											
37											
35											
33	GND										
31											
29											
27	UART3 RX	PJ9		LTDC_G2							27
25	UART3 TX	PJ8		LTDC_G1							25
23	VCC/+3V3										
21											
19											
17											
15											
13											
11											
9		MC34PF1550AEP									
7	COINCELL	31-LICELL									
5	POWER_ON_REQ	6-PWRON									
3	BOOT_SOURCE	PI8							RTC_TAMP2		3
1	FORCE_BOOTLOADER	BOOT0									

Legend

- Ground
- Power
- LED
- Internal Pin
- SWD Pin
- Digital Pin
- Analog Pin
- Other Pin
- Microcontroller's Port
- Default
- High Density Connector
- Analog
- Communication
- Timer
- Extra Features
- Debug

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⚠ **WARNING** Total output current sourced by sum of all I/Os and control pins is 140 mA

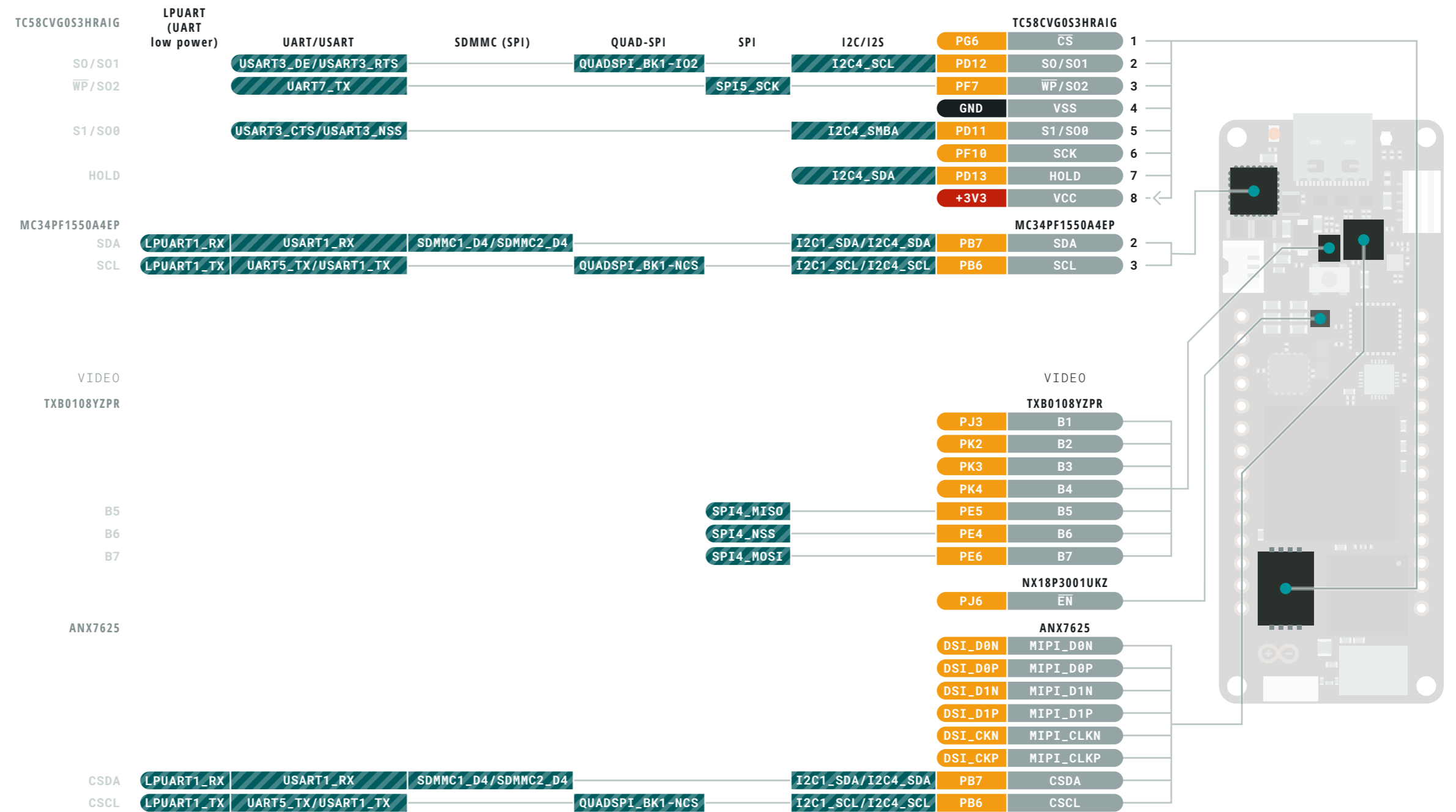⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

	LPTIM (low power timer)	HRTIM (high resolution timer)	TIMER	DFSDM	COMPARATOR	ADC/DAC			
TC58CVG0S3HRAIG								**TC58CVG0S3HRAIG**	
CS̄			TIM17_BKIN				PG6	CS̄	1
S0/S01	LPTIM1_IN1/LPTIM2_IN1		TIM4_CH1				PD12	S0/S01	2
W̄P̄/SO2			TIM17_CH1			ADC3_INN3/ADC3_INP7	PF7	W̄P̄/SO2	3
							GND	VSS	4
S1/SO0	LPTIM2_IN2	HRTIM_SCOUT					PD11	S1/SO0	5
SCK			TIM16_BKIN			ADC1_EXTI11/ADC1_INP2/ADC2_EXTI11/ADC3_EXTI11	PF10	SCK	6
HOLD	LPTIM1_OUT		TIM4_CH2				PD13	HOLD	7
							+3V3	VCC	8
MC34PF1550A4EP								**MC34PF1550A4EP**	
SDA		HRTIM_SCIN	TIM17_CH1N/TIM4_CH2	DFSDM1_CKIN5			PB7	SDA	2
SCL		HRTIM_SCOUT	TIM16_CH1N/TIM4_CH1	DFSDM1_DATIN5			PB6	SCL	3

	VIDEO							VIDEO	
TXB0108YZPR								**TXB0108YZPR**	
B1							PJ3	B1	
B2			TIM1_BKIN/TIM1_BKIN-COMP1/TIM1_BKIN-COMP2/ TIM8_BKIN/TIM8_BKIN-COMP1/TIM8_BKIN-COMP2				PK2	B2	
							PK3	B3	
							PK4	B4	
B5			TIM15_CH1	DFSDM1_CKIN3	COMP1_OUT		PE5	B5	
B6			TIM15_CH1N	DFSDM1_DATIN3	COMP2_INP		PE4	B6	
B7			TIM15_CH2/TIM1_BKIN2/TIM1_BKIN2-COMP1/ TIM1_BKIN2-COMP12		COMP2_OUT		PE6	B7	
NX18P3001UKZ								**NX18P3001UKZ**	
ĒN̄			TIM8_CH2				PJ6	ĒN̄	
ANX7625								**ANX7625**	
							DSI_D0N	MIPI_D0N	
							DSI_D0P	MIPI_D0P	
							DSI_D1N	MIPI_D1N	
							DSI_D1P	MIPI_D1P	
							DSI_CKN	MIPI_CLKN	
							DSI_CKP	MIPI_CLKP	
CSDA		HRTIM_SCIN	TIM17_CH1N/TIM4_CH2	DFSDM1_CKIN5			PB7	CSDA	
CSCL		HRTIM_SCOUT	TIM16_CH1N/TIM4_CH1	DFSDM1_DATIN5			PB6	CSCL	

Legend:

- ■ Ground
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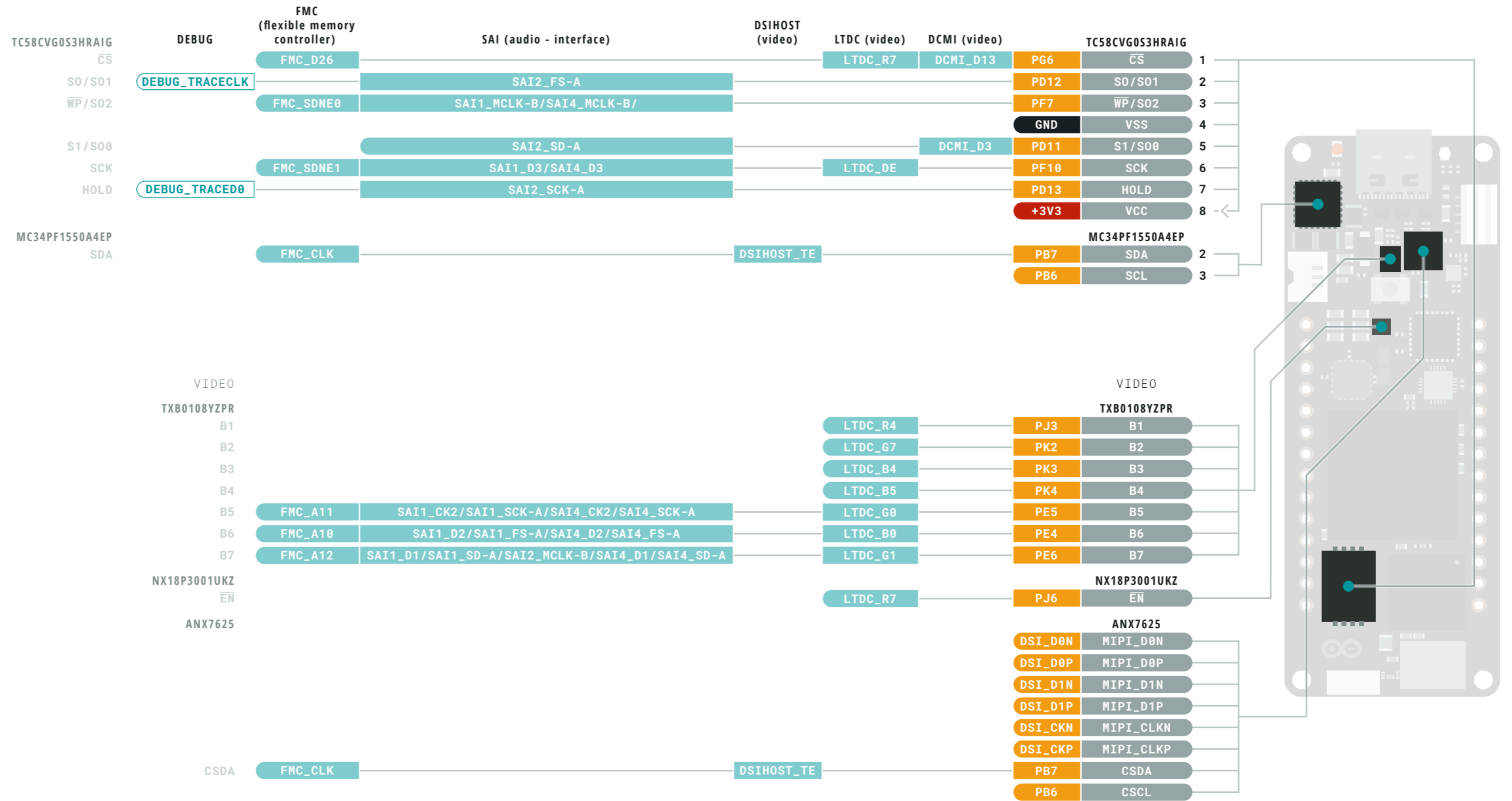⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

ARDUINO PORTENTA H7

TC58CVG0S3HRAIG	LPUART (UART low power)	UART/USART	SDMMC (SPI)	QUAD-SPI	SPI	I2C/I2S		TC58CVG0S3HRAIG	
							PG6	CS	1
S0/S01		USART3_DE/USART3_RTS		QUADSPI_BK1-IO2		I2C4_SCL	PD12	S0/S01	2
WP/SO2		UART7_TX			SPI5_SCK		PF7	WP/SO2	3
							GND	VSS	4
S1/SO0		USART3_CTS/USART3_NSS				I2C4_SMBA	PD11	S1/SO0	5
							PF10	SCK	6
HOLD						I2C4_SDA	PD13	HOLD	7
							+3V3	VCC	8

MC34PF1550A4EP								MC34PF1550A4EP	
SDA	LPUART1_RX	USART1_RX	SDMMC1_D4/SDMMC2_D4			I2C1_SDA/I2C4_SDA	PB7	SDA	2
SCL	LPUART1_TX	UART5_TX/USART1_TX		QUADSPI_BK1-NCS		I2C1_SCL/I2C4_SCL	PB6	SCL	3

VIDEO								VIDEO	
TXB0108YZPR								TXB0108YZPR	
							PJ3	B1	
							PK2	B2	
							PK3	B3	
							PK4	B4	
B5					SPI4_MISO		PE5	B5	
B6					SPI4_NSS		PE4	B6	
B7					SPI4_MOSI		PE6	B7	

								NX18P3001UKZ	
							PJ6	EN	

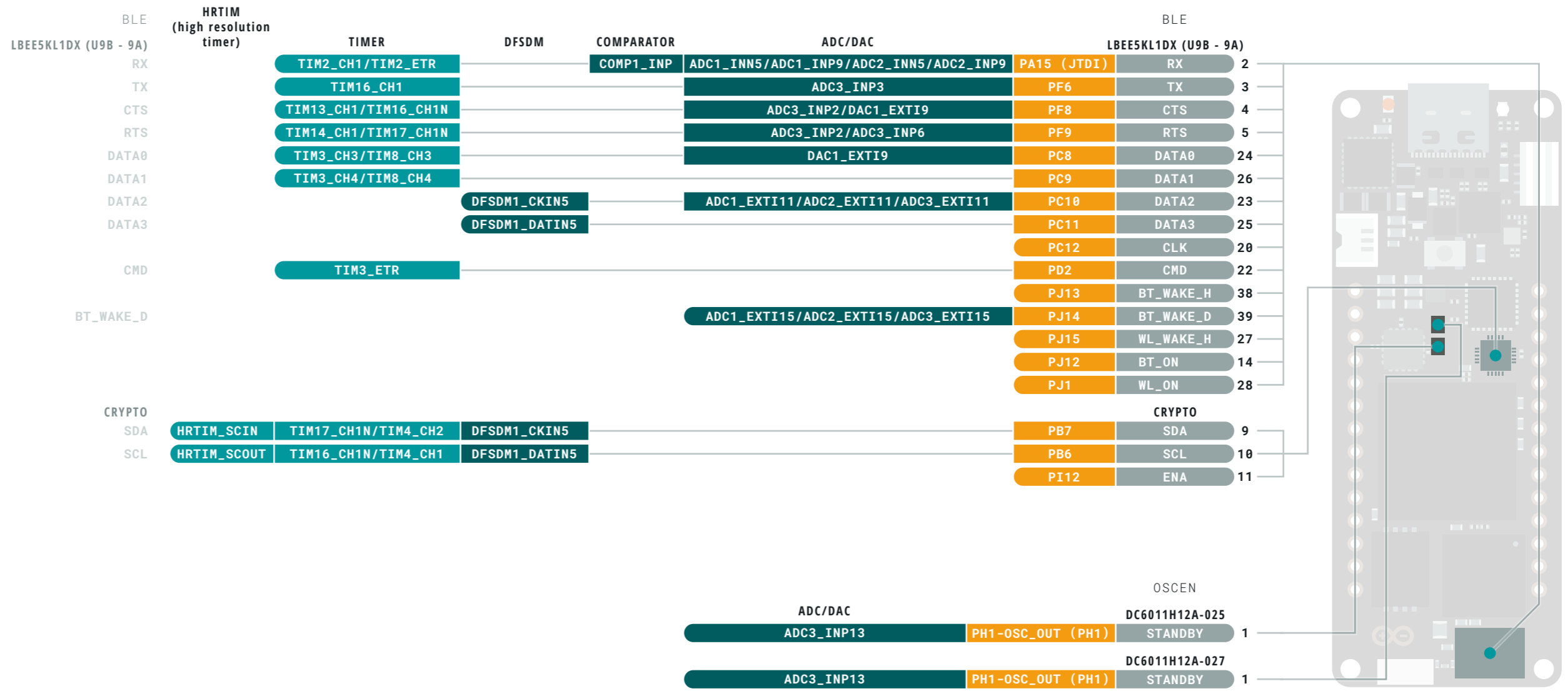| ANX7625								ANX7625	
							DSI_D0N	MIPI_D0N	
							DSI_D0P	MIPI_D0P	
							DSI_D1N	MIPI_D1N	
							DSI_D1P	MIPI_D1P	
							DSI_CKN	MIPI_CLKN	
							DSI_CKP	MIPI_CLKP	
CSDA	LPUART1_RX	USART1_RX	SDMMC1_D4/SDMMC2_D4			I2C1_SDA/I2C4_SDA	PB7	CSDA	
CSCL	LPUART1_TX	UART5_TX/USART1_TX		QUADSPI_BK1-NCS		I2C1_SCL/I2C4_SCL	PB6	CSCL	

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TC58CVG0S3HRAIG	DEBUG	FMC (flexible memory controller)	SAI (audio - interface)	DSIHOST (video)	LTDC (video)	DCMI (video)		TC58CVG0S3HRAIG	
C̄S̄		FMC_D26			LTDC_R7	DCMI_D13	PG6	C̄S̄	1
S0/S01	DEBUG_TRACECLK		SAI2_FS-A				PD12	S0/S01	2
W̄P̄/SO2		FMC_SDNE0	SAI1_MCLK-B/SAI4_MCLK-B/				PF7	W̄P̄/SO2	3
							GND	VSS	4
S1/SO0			SAI2_SD-A			DCMI_D3	PD11	S1/SO0	5
SCK		FMC_SDNE1	SAI1_D3/SAI4_D3		LTDC_DE		PF10	SCK	6
HOLD	DEBUG_TRACED0		SAI2_SCK-A				PD13	HOLD	7
							+3V3	VCC	8

MC34PF1550A4EP								MC34PF1550A4EP	
SDA		FMC_CLK		DSIHOST_TE			PB7	SDA	2
							PB6	SCL	3

VIDEO

VIDEO

TXB0108YZPR								TXB0108YZPR	
B1					LTDC_R4		PJ3	B1	
B2					LTDC_G7		PK2	B2	
B3					LTDC_B4		PK3	B3	
B4					LTDC_B5		PK4	B4	
B5		FMC_A11	SAI1_CK2/SAI1_SCK-A/SAI4_CK2/SAI4_SCK-A		LTDC_G0		PE5	B5	
B6		FMC_A10	SAI1_D2/SAI1_FS-A/SAI4_D2/SAI4_FS-A		LTDC_B0		PE4	B6	
B7		FMC_A12	SAI1_D1/SAI1_SD-A/SAI2_MCLK-B/SAI4_D1/SAI4_SD-A		LTDC_G1		PE6	B7	

NX18P3001UKZ								NX18P3001UKZ	
ĒN̄					LTDC_R7		PJ6	ĒN̄	

ANX7625								ANX7625	
							DSI_D0N	MIPI_D0N	
							DSI_D0P	MIPI_D0P	
							DSI_D1N	MIPI_D1N	
							DSI_D1P	MIPI_D1P	
							DSI_CKN	MIPI_CLKN	
							DSI_CKP	MIPI_CLKP	
CSDA		FMC_CLK		DSIHOST_TE			PB7	CSDA	
							PB6	CSCL	

Legend

- ■ Ground
- ■ Power
- ■ LED
- ■ Internal Pin
- ■ SWD Pin
- ◨ Digital Pin
- ◻ Analog Pin
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- ■ High Density Connector
- ■ Analog
- ▨ Communication
- ■ Timer
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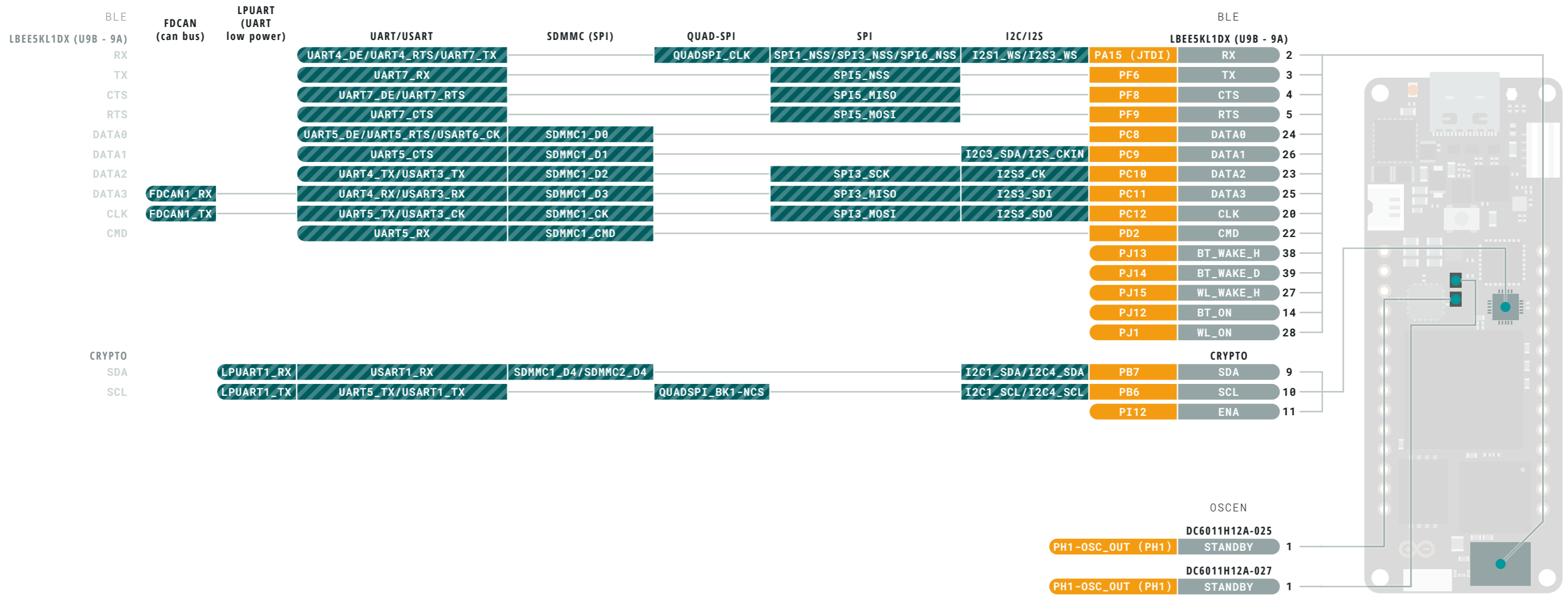⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

BLE	HRTIM (high resolution timer)	TIMER	DFSDM	COMPARATOR	ADC/DAC		BLE		
LBEE5KL1DX (U9B - 9A)							LBEE5KL1DX (U9B - 9A)		
RX		TIM2_CH1/TIM2_ETR		COMP1_INP	ADC1_INN5/ADC1_INP9/ADC2_INN5/ADC2_INP9	PA15 (JTDI)	RX	2	
TX		TIM16_CH1			ADC3_INP3	PF6	TX	3	
CTS		TIM13_CH1/TIM16_CH1N			ADC3_INP2/DAC1_EXTI9	PF8	CTS	4	
RTS		TIM14_CH1/TIM17_CH1N			ADC3_INP2/ADC3_INP6	PF9	RTS	5	
DATA0		TIM3_CH3/TIM8_CH3			DAC1_EXTI9	PC8	DATA0	24	
DATA1		TIM3_CH4/TIM8_CH4				PC9	DATA1	26	
DATA2			DFSDM1_CKIN5		ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11	PC10	DATA2	23	
DATA3			DFSDM1_DATIN5			PC11	DATA3	25	
						PC12	CLK	20	
CMD		TIM3_ETR				PD2	CMD	22	
						PJ13	BT_WAKE_H	38	
BT_WAKE_D					ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15	PJ14	BT_WAKE_D	39	
						PJ15	WL_WAKE_H	27	
						PJ12	BT_ON	14	
						PJ1	WL_ON	28	
CRYPTO							CRYPTO		
SDA	HRTIM_SCIN	TIM17_CH1N/TIM4_CH2	DFSDM1_CKIN5			PB7	SDA	9	
SCL	HRTIM_SCOUT	TIM16_CH1N/TIM4_CH1	DFSDM1_DATIN5			PB6	SCL	10	
						PI12	ENA	11	

			OSCEN	
	ADC/DAC		DC6011H12A-025	
	ADC3_INP13	PH1-OSC_OUT (PH1)	STANDBY	1
			DC6011H12A-027	
	ADC3_INP13	PH1-OSC_OUT (PH1)	STANDBY	1

Legend:
- Ground
- Power
- LED
- Internal Pin
- SWD Pin
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- Microcontroller's Port
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- Communication
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- Extra Features
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BLE	FDCAN	LPUART (UART low power)	UART/USART	SDMMC (SPI)	QUAD-SPI	SPI	I2C/I2S		BLE	
LBEE5KL1DX (U9B - 9A)	(can bus)								LBEE5KL1DX (U9B - 9A)	
RX			UART4_DE/UART4_RTS/UART7_TX		QUADSPI_CLK	SPI1_NSS/SPI3_NSS/SPI6_NSS	I2S1_WS/I2S3_WS	PA15 (JTDI)	RX	2
TX			UART7_RX			SPI5_NSS		PF6	TX	3
CTS			UART7_DE/UART7_RTS			SPI5_MISO		PF8	CTS	4
RTS			UART7_CTS			SPI5_MOSI		PF9	RTS	5
DATA0			UART5_DE/UART5_RTS/USART6_CK	SDMMC1_D0				PC8	DATA0	24
DATA1			UART5_CTS	SDMMC1_D1			I2C3_SDA/I2S_CKIN	PC9	DATA1	26
DATA2			UART4_TX/USART3_TX	SDMMC1_D2		SPI3_SCK	I2S3_CK	PC10	DATA2	23
DATA3	FDCAN1_RX		UART4_RX/USART3_RX	SDMMC1_D3		SPI3_MISO	I2S3_SDI	PC11	DATA3	25
CLK	FDCAN1_TX		UART5_TX/USART3_CK	SDMMC1_CK		SPI3_MOSI	I2S3_SDO	PC12	CLK	20
CMD			UART5_RX	SDMMC1_CMD				PD2	CMD	22
								PJ13	BT_WAKE_H	38
								PJ14	BT_WAKE_D	39
								PJ15	WL_WAKE_H	27
								PJ12	BT_ON	14
								PJ1	WL_ON	28
CRYPTO								CRYPTO		
SDA		LPUART1_RX	USART1_RX	SDMMC1_D4/SDMMC2_D4			I2C1_SDA/I2C4_SDA	PB7	SDA	9
SCL		LPUART1_TX	UART5_TX/USART1_TX		QUADSPI_BK1-NCS		I2C1_SCL/I2C4_SCL	PB6	SCL	10
								PI12	ENA	11

OSCEN

DC6011H12A-025

| PH1-OSC_OUT (PH1) | STANDBY | 1 |

DC6011H12A-027

| PH1-OSC_OUT (PH1) | STANDBY | 1 |

Legend:

- ■ Ground
- ■ Power
- ■ LED
- ■ Internal Pin
- ■ SWD Pin
- ▨ Digital Pin
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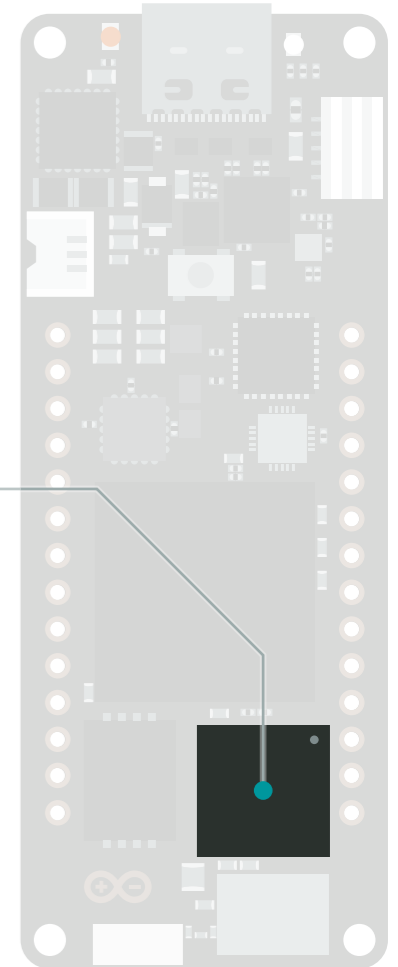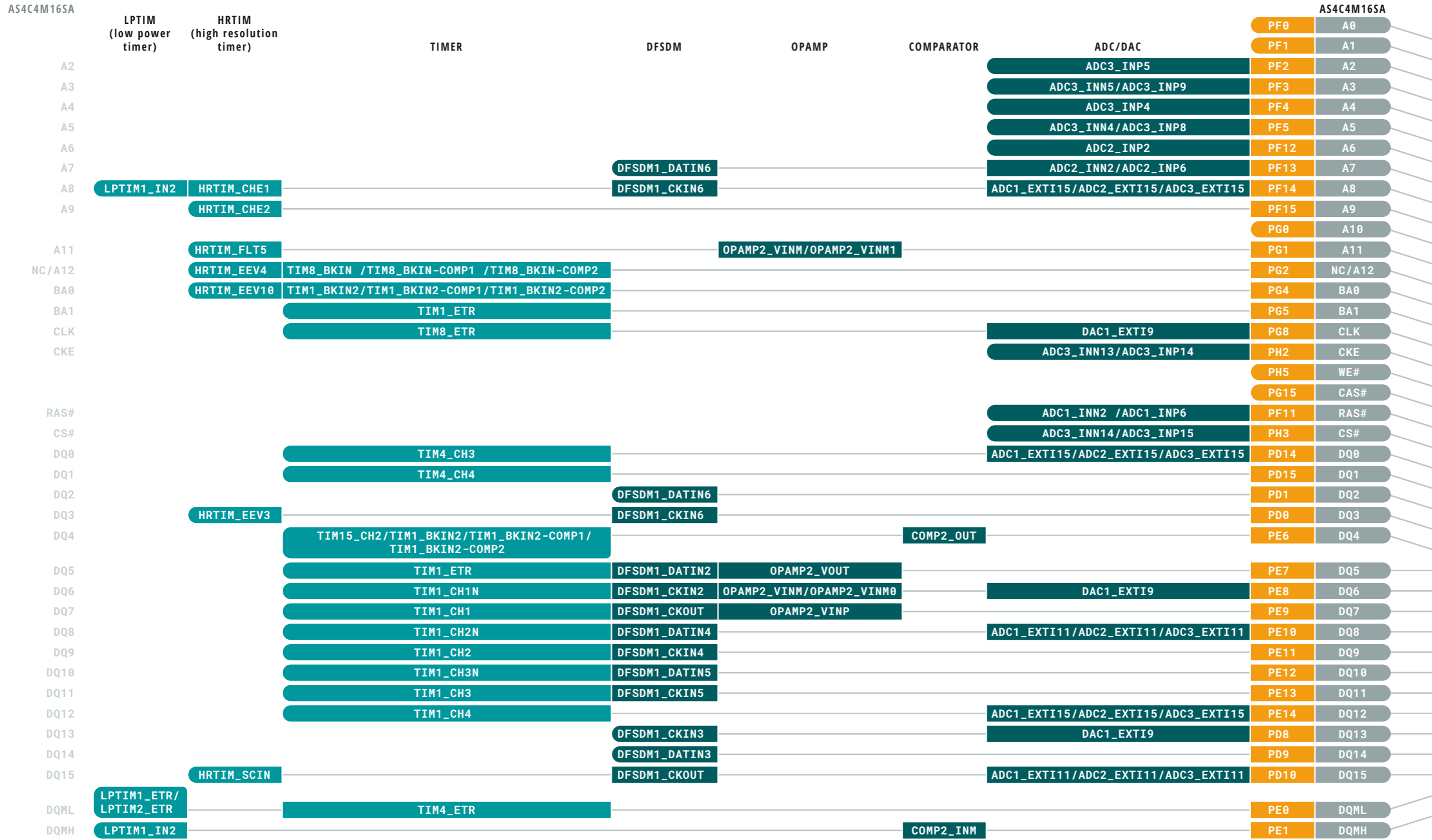⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

SYS (clock)	RCC (clock)	FMC (flexible memory controller)	SPDIFRX (audio - microphone)	SAI (audio - interface)	DSIHOST (video)	LTDC (video)			
							PA15 (JTDI)	RX	2
		FMC_SDCKE0		SAI1_SD-B /SAI4_SD-B			PF6	TX	3
				SAI1_SCK-B/SAI4_SCK-B			PF8	CTS	4
		FMC_SDNWE		SAI1_FS-B /SAI4_FS-B			PF9	RTS	5
SYS_WKUP2		FMC_A20					PC8	DATA0	24
	RCC_OSC32-IN	FMC_A21				LTDC_B2/LTDC_G3	PC9	DATA1	26
	RCC_OSC32-OUT	FMC_A22				LTDC_R2	PC10	DATA2	23
		FMC_D4 /FMC_DA4					PC11	DATA3	25
		FMC_D5 /FMC_DA5					PC12	CLK	20
		FMC_D11/FMC_DA11	SPDIFRX1_IN0				PD2	CMD	22
						LTDC_B1/LTDC_B4	PJ13	BT_WAKE_H	38
						LTDC_B2	PJ14	BT_WAKE_D	39
						LTDC_B3	PJ15	WL_WAKE_H	27
						LTDC_B0/LTDC_G3	PJ12	BT_ON	14
						LTDC_R2	PJ1	WL_ON	28

BLE
LBEE5KL1DX (U9B - 9A)

TX
CTS
RTS
DATA0
DATA1
DATA2
DATA3
CLK
CMD
BT_WAKE_H
BT_WAKE_D
WL_WAKE_H
BT_ON
WL_ON

BLE
LBEE5KL1DX (U9B - 9A)

CRYPTO

		FMC_CLK			DSIHOST_TE		PB7	SDA	9
							PB6	SCL	10
SYS_TRGIN						LTDC_HSYNC	PI12	ENA	11

CRYPTO
SDA

ENA

CRYPTO

OSCEN

DCMI (video)

DC6011H12A-025

DCMI_D2	PH1-OSC_OUT (PH1)	STANDBY	1

DC6011H12A-027

DCMI_D2	PH1-OSC_OUT (PH1)	STANDBY	1

AS4C4M16SA

AS4C4M16SA	LPTIM (low power timer)	HRTIM (high resolution timer)	TIMER	DFSDM	OPAMP	COMPARATOR	ADC/DAC	Port	AS4C4M16SA
								PF0	A0
								PF1	A1
A2							ADC3_INP5	PF2	A2
A3							ADC3_INN5/ADC3_INP9	PF3	A3
A4							ADC3_INP4	PF4	A4
A5							ADC3_INN4/ADC3_INP8	PF5	A5
A6							ADC2_INP2	PF12	A6
A7				DFSDM1_DATIN6			ADC2_INN2/ADC2_INP6	PF13	A7
A8	LPTIM1_IN2	HRTIM_CHE1		DFSDM1_CKIN6			ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15	PF14	A8
A9		HRTIM_CHE2						PF15	A9
								PG0	A10
A11		HRTIM_FLT5			OPAMP2_VINM/OPAMP2_VINM1			PG1	A11
NC/A12		HRTIM_EEV4	TIM8_BKIN /TIM8_BKIN-COMP1 /TIM8_BKIN-COMP2					PG2	NC/A12
BA0		HRTIM_EEV10	TIM1_BKIN2/TIM1_BKIN2-COMP1/TIM1_BKIN2-COMP2					PG4	BA0
BA1			TIM1_ETR					PG5	BA1
CLK			TIM8_ETR				DAC1_EXTI9	PG8	CLK
CKE							ADC3_INN13/ADC3_INP14	PH2	CKE
								PH5	WE#
								PG15	CAS#
RAS#							ADC1_INN2 /ADC1_INP6	PF11	RAS#
CS#							ADC3_INN14/ADC3_INP15	PH3	CS#
DQ0			TIM4_CH3				ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15	PD14	DQ0
DQ1			TIM4_CH4					PD15	DQ1
DQ2				DFSDM1_DATIN6				PD1	DQ2
DQ3		HRTIM_EEV3		DFSDM1_CKIN6				PD0	DQ3
DQ4			TIM15_CH2/TIM1_BKIN2/TIM1_BKIN2-COMP1/ TIM1_BKIN2-COMP2			COMP2_OUT		PE6	DQ4
DQ5			TIM1_ETR	DFSDM1_DATIN2	OPAMP2_VOUT			PE7	DQ5
DQ6			TIM1_CH1N	DFSDM1_CKIN2	OPAMP2_VINM/OPAMP2_VINM0		DAC1_EXTI9	PE8	DQ6
DQ7			TIM1_CH1	DFSDM1_CKOUT	OPAMP2_VINP			PE9	DQ7
DQ8			TIM1_CH2N	DFSDM1_DATIN4			ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11	PE10	DQ8
DQ9			TIM1_CH2	DFSDM1_CKIN4				PE11	DQ9
DQ10			TIM1_CH3N	DFSDM1_DATIN5				PE12	DQ10
DQ11			TIM1_CH3	DFSDM1_CKIN5				PE13	DQ11
DQ12			TIM1_CH4				ADC1_EXTI15/ADC2_EXTI15/ADC3_EXTI15	PE14	DQ12
DQ13				DFSDM1_CKIN3			DAC1_EXTI9	PD8	DQ13
DQ14				DFSDM1_DATIN3				PD9	DQ14
DQ15		HRTIM_SCIN		DFSDM1_CKOUT			ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11	PD10	DQ15
DQML	LPTIM1_ETR/ LPTIM2_ETR		TIM4_ETR					PE0	DQML
DQMH	LPTIM1_IN2					COMP2_INM		PE1	DQMH

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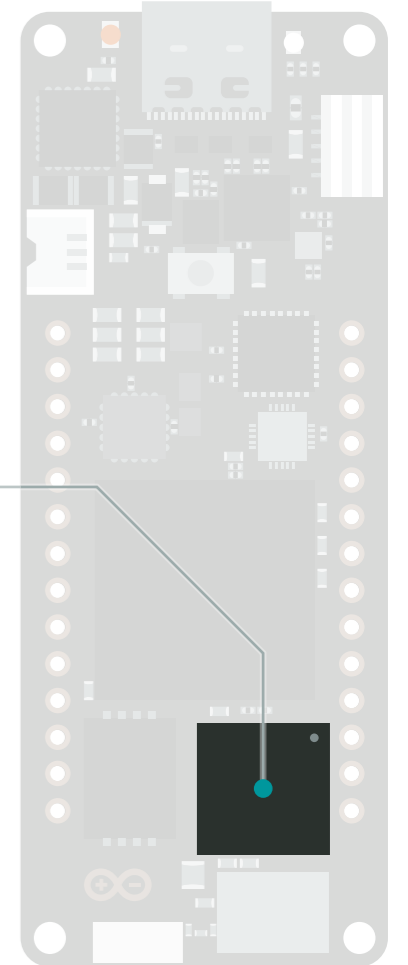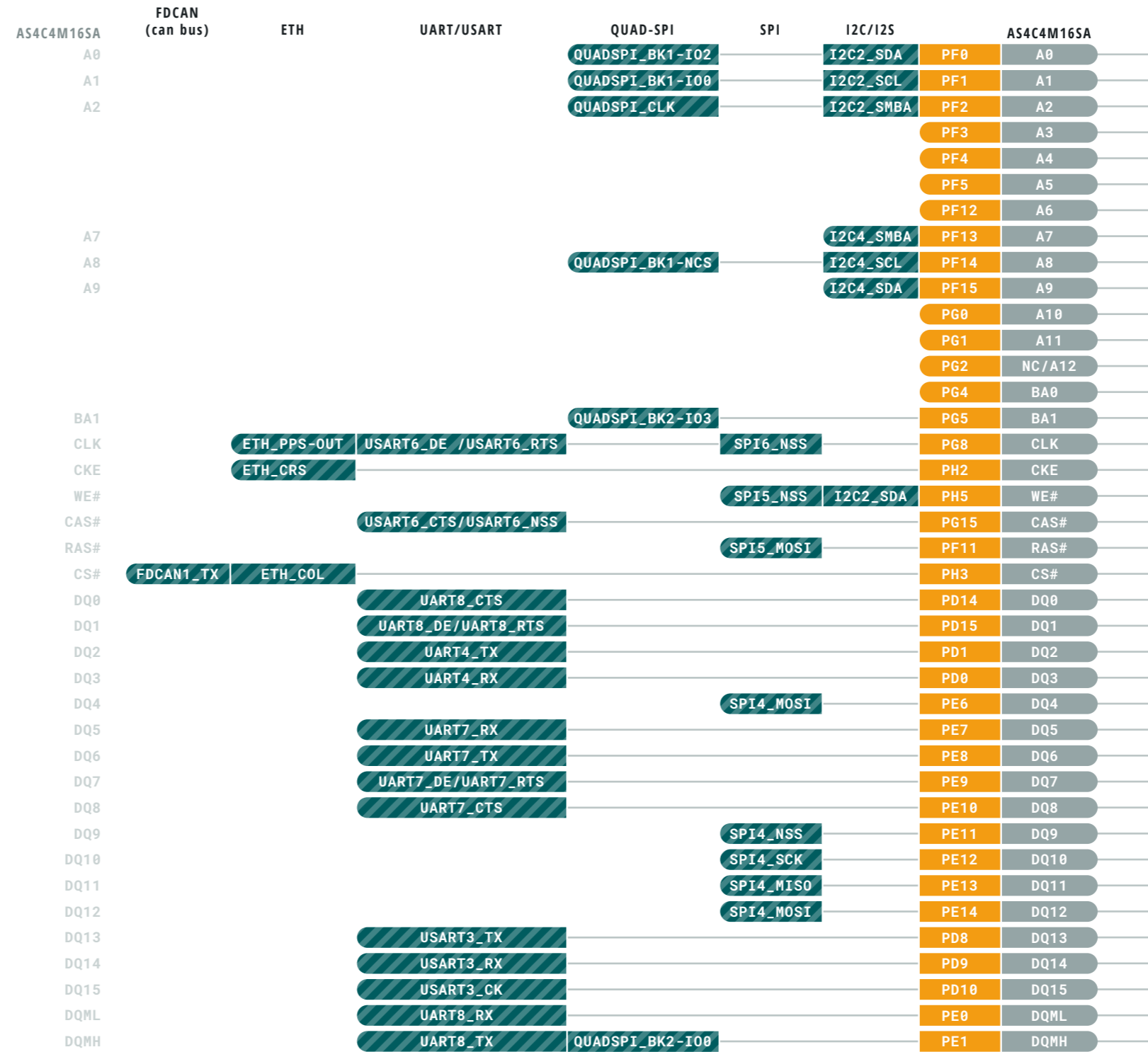⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

AS4C4M16SA	FDCAN (can bus)	ETH	UART/USART	QUAD-SPI	SPI	I2C/I2S		AS4C4M16SA
A0				QUADSPI_BK1-IO2		I2C2_SDA	PF0	A0
A1				QUADSPI_BK1-IO0		I2C2_SCL	PF1	A1
A2				QUADSPI_CLK		I2C2_SMBA	PF2	A2
							PF3	A3
							PF4	A4
							PF5	A5
							PF12	A6
A7						I2C4_SMBA	PF13	A7
A8				QUADSPI_BK1-NCS		I2C4_SCL	PF14	A8
A9						I2C4_SDA	PF15	A9
							PG0	A10
							PG1	A11
							PG2	NC/A12
							PG4	BA0
BA1				QUADSPI_BK2-IO3			PG5	BA1
CLK		ETH_PPS-OUT	USART6_DE /USART6_RTS		SPI6_NSS		PG8	CLK
CKE		ETH_CRS					PH2	CKE
WE#					SPI5_NSS	I2C2_SDA	PH5	WE#
CAS#			USART6_CTS/USART6_NSS				PG15	CAS#
RAS#					SPI5_MOSI		PF11	RAS#
CS#	FDCAN1_TX	ETH_COL					PH3	CS#
DQ0			UART8_CTS				PD14	DQ0
DQ1			UART8_DE/UART8_RTS				PD15	DQ1
DQ2			UART4_TX				PD1	DQ2
DQ3			UART4_RX				PD0	DQ3
DQ4					SPI4_MOSI		PE6	DQ4
DQ5			UART7_RX				PE7	DQ5
DQ6			UART7_TX				PE8	DQ6
DQ7			UART7_DE/UART7_RTS				PE9	DQ7
DQ8			UART7_CTS				PE10	DQ8
DQ9					SPI4_NSS		PE11	DQ9
DQ10					SPI4_SCK		PE12	DQ10
DQ11					SPI4_MISO		PE13	DQ11
DQ12					SPI4_MOSI		PE14	DQ12
DQ13			USART3_TX				PD8	DQ13
DQ14			USART3_RX				PD9	DQ14
DQ15			USART3_CK				PD10	DQ15
DQML			UART8_RX				PE0	DQML
DQMH			UART8_TX	QUADSPI_BK2-IO0			PE1	DQMH

Legend

- ■ Ground
- ■ Power
- ■ LED
- ■ Internal Pin
- ■ SWD Pin
- ▨ Digital Pin
- ▨ Analog Pin
- □ Other Pin
- ■ Microcontroller's Port
- ■ Default
- ■ High Density Connector
- ■ Analog
- ▨ Communication
- ■ Timer
- ■ Extra Features
- □ Debug

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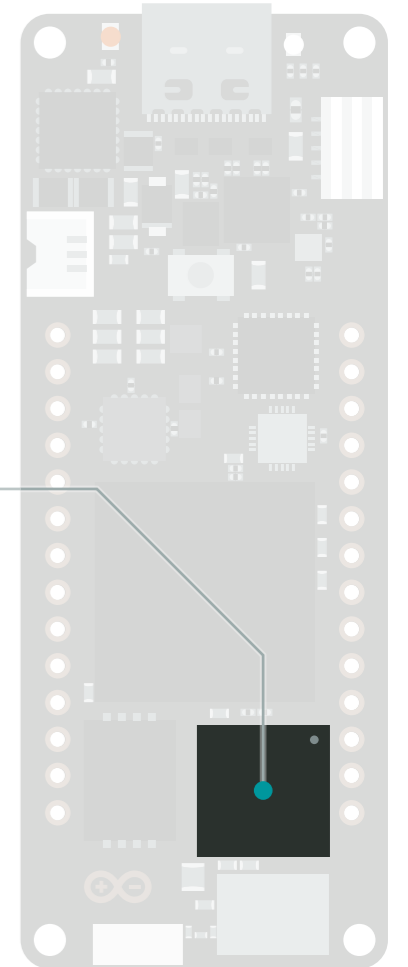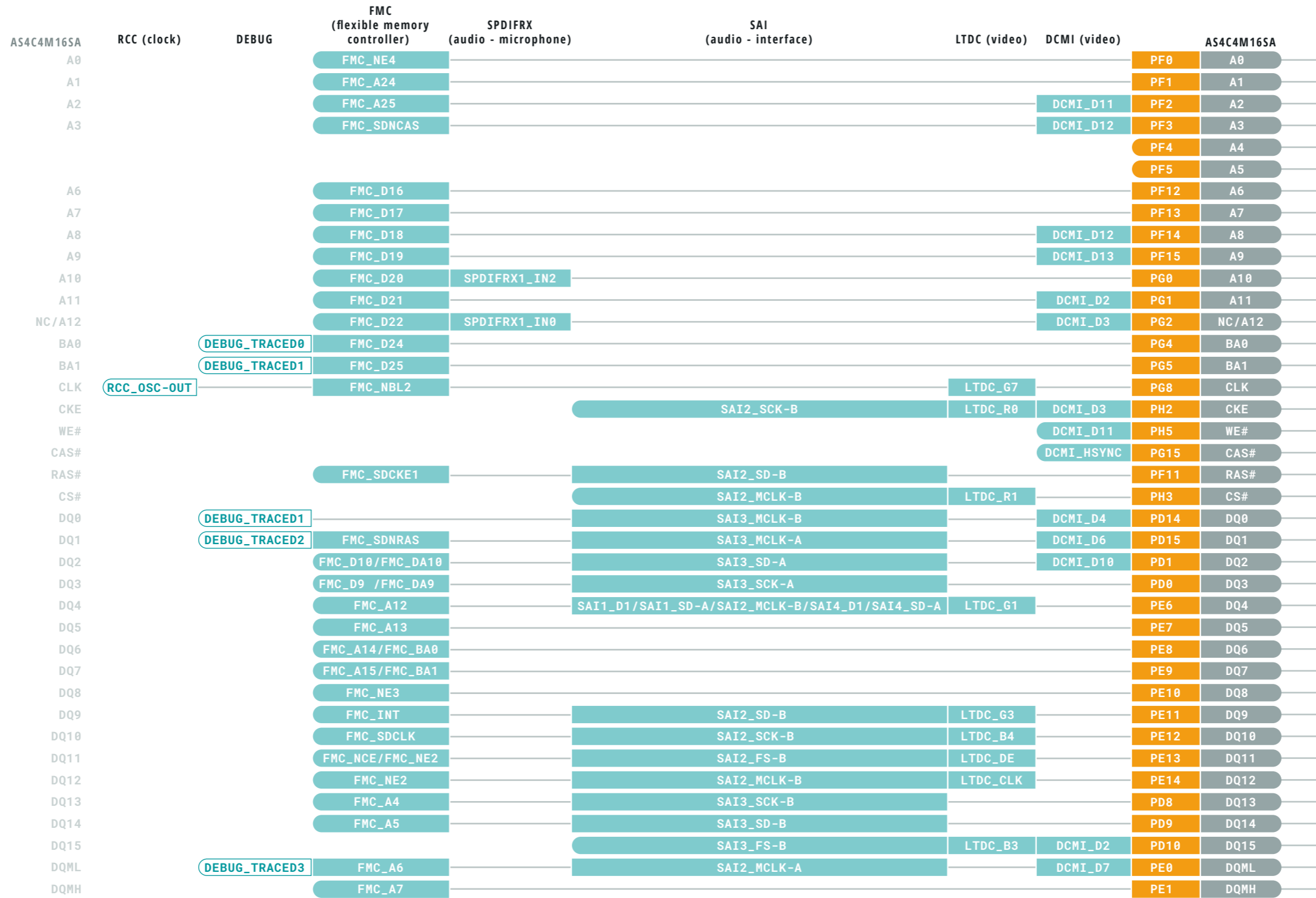⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

AS4C4M16SA	RCC (clock)	DEBUG	FMC (flexible memory controller)	SPDIFRX (audio - microphone)	SAI (audio - interface)	LTDC (video)	DCMI (video)	AS4C4M16SA	
A0			FMC_NE4					PF0	A0
A1			FMC_A24					PF1	A1
A2			FMC_A25				DCMI_D11	PF2	A2
A3			FMC_SDNCAS				DCMI_D12	PF3	A3
								PF4	A4
								PF5	A5
A6			FMC_D16					PF12	A6
A7			FMC_D17					PF13	A7
A8			FMC_D18				DCMI_D12	PF14	A8
A9			FMC_D19				DCMI_D13	PF15	A9
A10			FMC_D20	SPDIFRX1_IN2				PG0	A10
A11			FMC_D21				DCMI_D2	PG1	A11
NC/A12			FMC_D22	SPDIFRX1_IN0			DCMI_D3	PG2	NC/A12
BA0		DEBUG_TRACED0	FMC_D24					PG4	BA0
BA1		DEBUG_TRACED1	FMC_D25					PG5	BA1
CLK	RCC_OSC-OUT		FMC_NBL2			LTDC_G7		PG8	CLK
CKE					SAI2_SCK-B	LTDC_R0	DCMI_D3	PH2	CKE
WE#							DCMI_D11	PH5	WE#
CAS#							DCMI_HSYNC	PG15	CAS#
RAS#			FMC_SDCKE1		SAI2_SD-B			PF11	RAS#
CS#					SAI2_MCLK-B	LTDC_R1		PH3	CS#
DQ0		DEBUG_TRACED1			SAI3_MCLK-B		DCMI_D4	PD14	DQ0
DQ1		DEBUG_TRACED2	FMC_SDNRAS		SAI3_MCLK-A		DCMI_D6	PD15	DQ1
DQ2			FMC_D10/FMC_DA10		SAI3_SD-A		DCMI_D10	PD1	DQ2
DQ3			FMC_D9 /FMC_DA9		SAI3_SCK-A			PD0	DQ3
DQ4			FMC_A12		SAI1_D1/SAI1_SD-A/SAI2_MCLK-B/SAI4_D1/SAI4_SD-A	LTDC_G1		PE6	DQ4
DQ5			FMC_A13					PE7	DQ5
DQ6			FMC_A14/FMC_BA0					PE8	DQ6
DQ7			FMC_A15/FMC_BA1					PE9	DQ7
DQ8			FMC_NE3					PE10	DQ8
DQ9			FMC_INT		SAI2_SD-B	LTDC_G3		PE11	DQ9
DQ10			FMC_SDCLK		SAI2_SCK-B	LTDC_B4		PE12	DQ10
DQ11			FMC_NCE/FMC_NE2		SAI2_FS-B	LTDC_DE		PE13	DQ11
DQ12			FMC_NE2		SAI2_MCLK-B	LTDC_CLK		PE14	DQ12
DQ13			FMC_A4		SAI3_SCK-B			PD8	DQ13
DQ14			FMC_A5		SAI3_SD-B			PD9	DQ14
DQ15					SAI3_FS-B	LTDC_B3	DCMI_D2	PD10	DQ15
DQML		DEBUG_TRACED3	FMC_A6		SAI2_MCLK-A		DCMI_D7	PE0	DQML
DQMH			FMC_A7					PE1	DQMH

Legend

- ■ Ground
- ■ Power
- ■ LED
- ■ Internal Pin
- ■ SWD Pin
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- ▨ Analog Pin
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- ■ Analog
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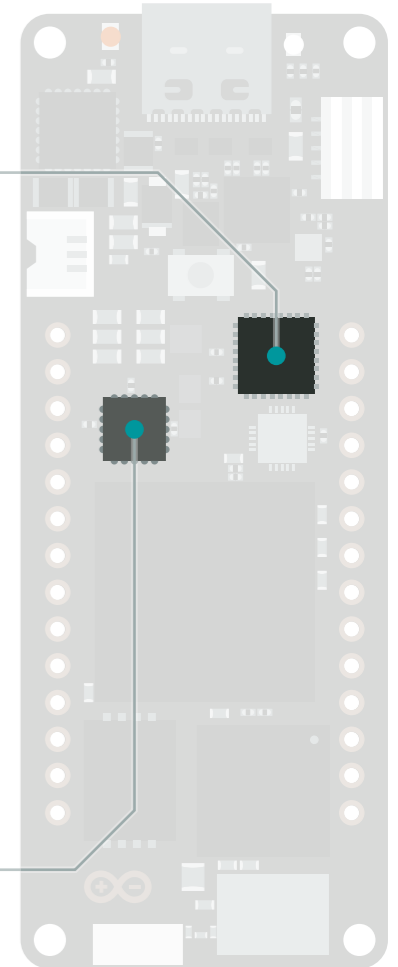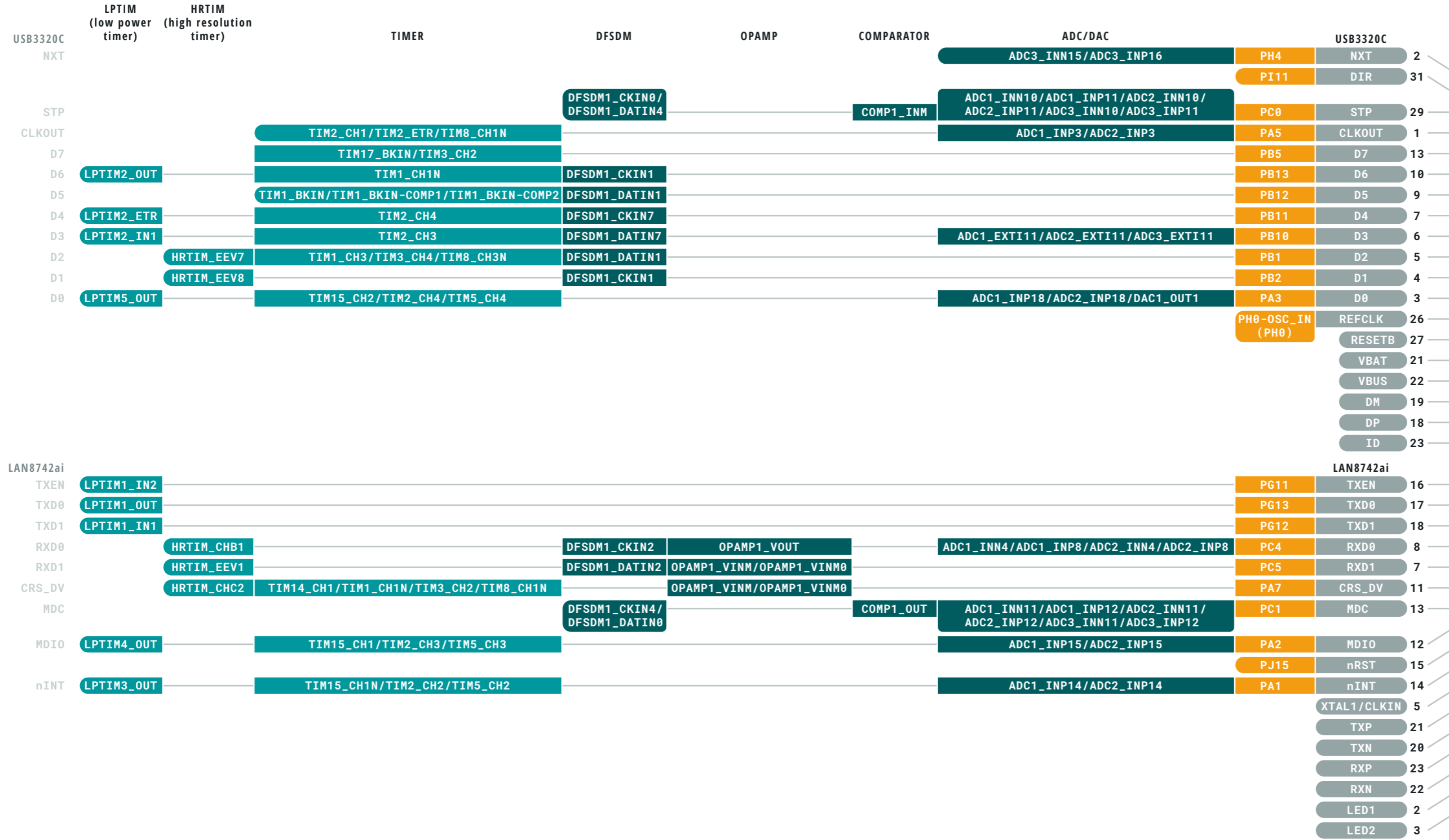⚠ **WARNING** Output current sunk by any I/O and control pin is 20 mA

ARDUINO

LPTIM (low power timer)	HRTIM (high resolution timer)	TIMER	DFSDM	OPAMP	COMPARATOR	ADC/DAC		USB3320C	

USB3320C

						ADC3_INN15/ADC3_INP16	PH4	NXT	2
							PI11	DIR	31
				DFSDM1_CKIN0/ DFSDM1_DATIN4	COMP1_INM	ADC1_INN10/ADC1_INP11/ADC2_INN10/ ADC2_INP11/ADC3_INN10/ADC3_INP11	PC0	STP	29
		TIM2_CH1/TIM2_ETR/TIM8_CH1N				ADC1_INP3/ADC2_INP3	PA5	CLKOUT	1
		TIM17_BKIN/TIM3_CH2					PB5	D7	13
LPTIM2_OUT		TIM1_CH1N	DFSDM1_CKIN1				PB13	D6	10
		TIM1_BKIN/TIM1_BKIN-COMP1/TIM1_BKIN-COMP2	DFSDM1_DATIN1				PB12	D5	9
LPTIM2_ETR		TIM2_CH4	DFSDM1_CKIN7				PB11	D4	7
LPTIM2_IN1		TIM2_CH3	DFSDM1_DATIN7			ADC1_EXTI11/ADC2_EXTI11/ADC3_EXTI11	PB10	D3	6
	HRTIM_EEV7	TIM1_CH3/TIM3_CH4/TIM8_CH3N	DFSDM1_DATIN1				PB1	D2	5
	HRTIM_EEV8		DFSDM1_CKIN1				PB2	D1	4
LPTIM5_OUT		TIM15_CH2/TIM2_CH4/TIM5_CH4				ADC1_INP18/ADC2_INP18/DAC1_OUT1	PA3	D0	3
							PH0-OSC_IN (PH0)	REFCLK	26
								RESETB	27
								VBAT	21
								VBUS	22
								DM	19
								DP	18
								ID	23

LAN8742ai

								LAN8742ai	
LPTIM1_IN2							PG11	TXEN	16
LPTIM1_OUT							PG13	TXD0	17
LPTIM1_IN1							PG12	TXD1	18
	HRTIM_CHB1		DFSDM1_CKIN2	OPAMP1_VOUT		ADC1_INN4/ADC1_INP8/ADC2_INN4/ADC2_INP8	PC4	RXD0	8
	HRTIM_EEV1		DFSDM1_DATIN2	OPAMP1_VINM/OPAMP1_VINM0			PC5	RXD1	7
	HRTIM_CHC2	TIM14_CH1/TIM1_CH1N/TIM3_CH2/TIM8_CH1N		OPAMP1_VINM/OPAMP1_VINM0			PA7	CRS_DV	11
			DFSDM1_CKIN4/ DFSDM1_DATIN0		COMP1_OUT	ADC1_INN11/ADC1_INP12/ADC2_INN11/ ADC2_INP12/ADC3_INN11/ADC3_INP12	PC1	MDC	13
LPTIM4_OUT		TIM15_CH1/TIM2_CH3/TIM5_CH3				ADC1_INP15/ADC2_INP15	PA2	MDIO	12
							PJ15	nRST	15
LPTIM3_OUT		TIM15_CH1N/TIM2_CH2/TIM5_CH2				ADC1_INP14/ADC2_INP14	PA1	nINT	14
								XTAL1/CLKIN	5
								TXP	21
								TXN	20
								RXP	23
								RXN	22
								LED1	2
								LED2	3

Legend

- Ground
- Power
- LED
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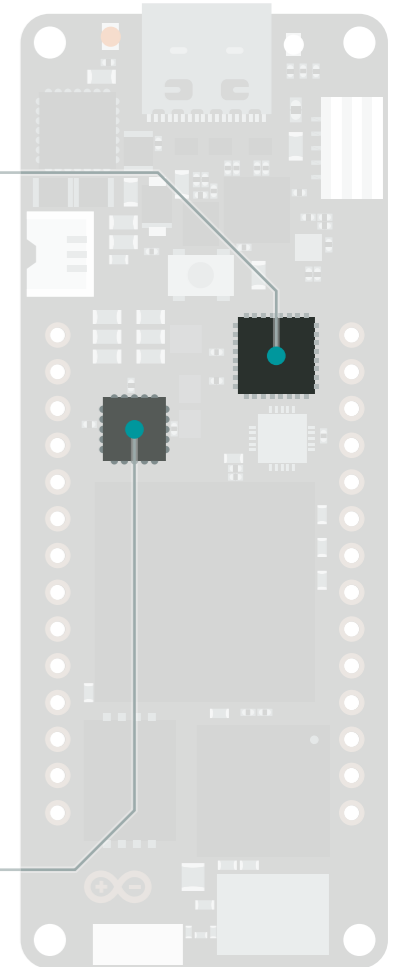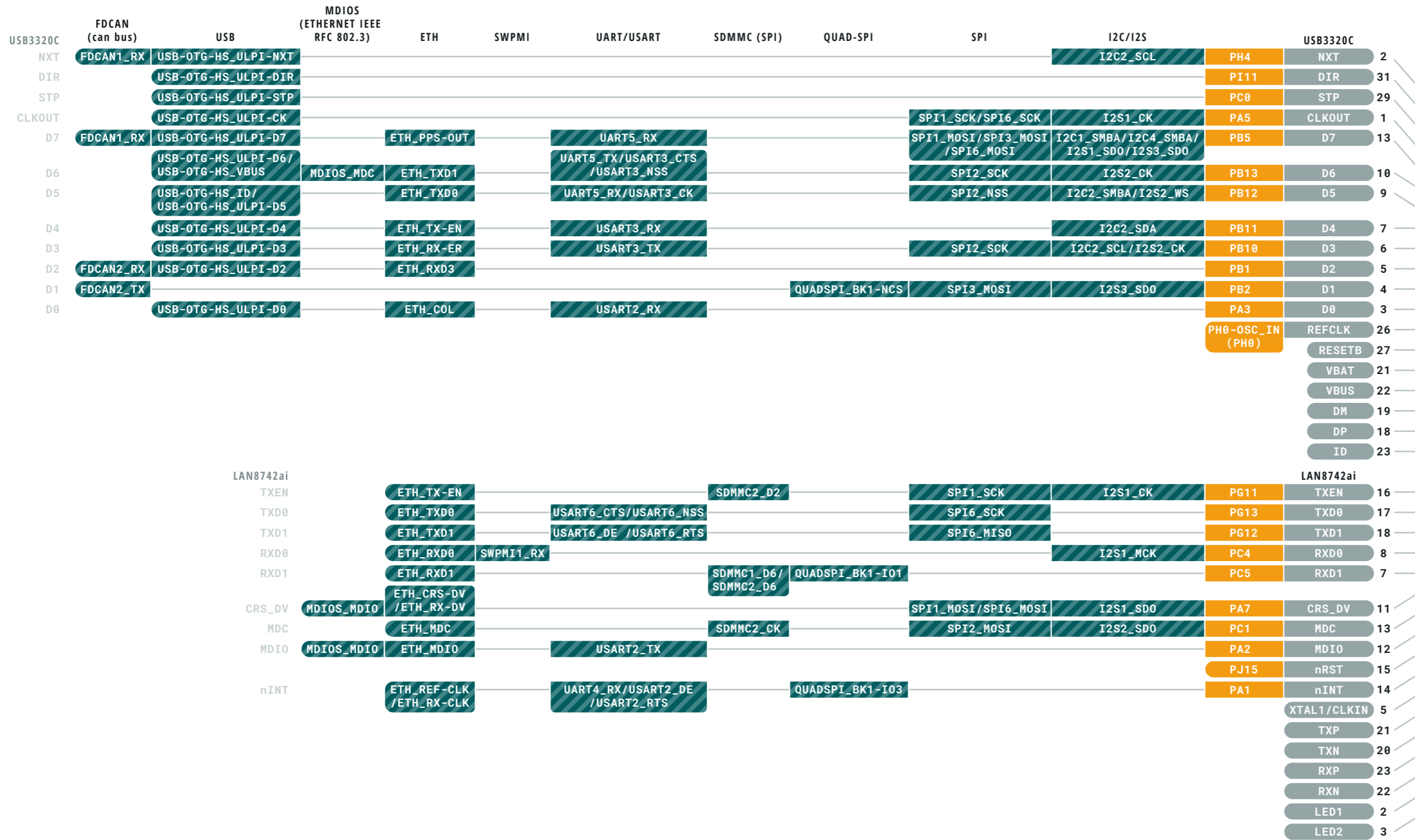**WARNING** Output current sunk by any I/O and control pin is 20 mA

ARDUINO

USB3320C

	FDCAN (can bus)	USB	MDIOS (ETHERNET IEEE RFC 802.3)	ETH	SWPMI	UART/USART	SDMMC (SPI)	QUAD-SPI	SPI	I2C/I2S	Port	USB3320C	
NXT	FDCAN1_RX	USB-OTG-HS_ULPI-NXT								I2C2_SCL	PH4	NXT	2
DIR		USB-OTG-HS_ULPI-DIR									PI11	DIR	31
STP		USB-OTG-HS_ULPI-STP									PC0	STP	29
CLKOUT		USB-OTG-HS_ULPI-CK							SPI1_SCK/SPI6_SCK	I2S1_CK	PA5	CLKOUT	1
D7	FDCAN1_RX	USB-OTG-HS_ULPI-D7		ETH_PPS-OUT		UART5_RX			SPI1_MOSI/SPI3_MOSI/SPI6_MOSI	I2C1_SMBA/I2C4_SMBA/I2S1_SDO/I2S3_SDO	PB5	D7	13
D6		USB-OTG-HS_ULPI-D6/ USB-OTG-HS_VBUS	MDIOS_MDC	ETH_TXD1		UART5_TX/USART3_CTS /USART3_NSS			SPI2_SCK	I2S2_CK	PB13	D6	10
D5		USB-OTG-HS_ID/ USB-OTG-HS_ULPI-D5		ETH_TXD0		UART5_RX/USART3_CK			SPI2_NSS	I2C2_SMBA/I2S2_WS	PB12	D5	9
D4		USB-OTG-HS_ULPI-D4		ETH_TX-EN		USART3_RX				I2C2_SDA	PB11	D4	7
D3		USB-OTG-HS_ULPI-D3		ETH_RX-ER		USART3_TX			SPI2_SCK	I2C2_SCL/I2S2_CK	PB10	D3	6
D2	FDCAN2_RX	USB-OTG-HS_ULPI-D2		ETH_RXD3							PB1	D2	5
D1	FDCAN2_TX							QUADSPI_BK1-NCS	SPI3_MOSI	I2S3_SDO	PB2	D1	4
D0		USB-OTG-HS_ULPI-D0		ETH_COL		USART2_RX					PA3	D0	3
											PH0-OSC_IN (PH0)	REFCLK	26
												RESETB	27
												VBAT	21
												VBUS	22
												DM	19
												DP	18
												ID	23

LAN8742ai

	FDCAN	USB	MDIOS	ETH	SWPMI	UART/USART	SDMMC (SPI)	QUAD-SPI	SPI	I2C/I2S	Port	LAN8742ai	
TXEN		ETH_TX-EN					SDMMC2_D2		SPI1_SCK	I2S1_CK	PG11	TXEN	16
TXD0		ETH_TXD0				USART6_CTS/USART6_NSS			SPI6_SCK		PG13	TXD0	17
TXD1		ETH_TXD1				USART6_DE /USART6_RTS			SPI6_MISO		PG12	TXD1	18
RXD0		ETH_RXD0		SWPMI1_RX						I2S1_MCK	PC4	RXD0	8
RXD1		ETH_RXD1					SDMMC1_D6/ SDMMC2_D6	QUADSPI_BK1-IO1			PC5	RXD1	7
CRS_DV		MDIOS_MDIO	ETH_CRS-DV /ETH_RX-DV						SPI1_MOSI/SPI6_MOSI	I2S1_SDO	PA7	CRS_DV	11
MDC		ETH_MDC					SDMMC2_CK		SPI2_MOSI	I2S2_SDO	PC1	MDC	13
MDIO		MDIOS_MDIO	ETH_MDIO			USART2_TX					PA2	MDIO	12
											PJ15	nRST	15
nINT		ETH_REF-CLK /ETH_RX-CLK				UART4_RX/USART2_DE /USART2_RTS		QUADSPI_BK1-IO3			PA1	nINT	14
												XTAL1/CLKIN	5
												TXP	21
												TXN	20
												RXP	23
												RXN	22
												LED1	2
												LED2	3

Legend

- Ground
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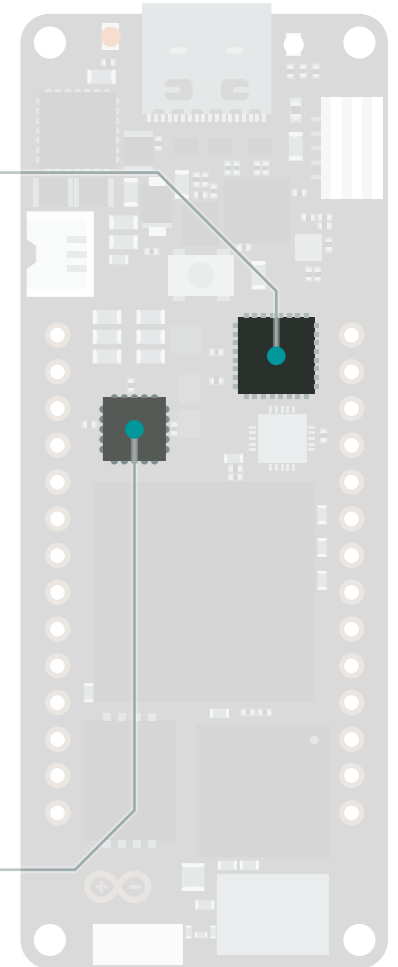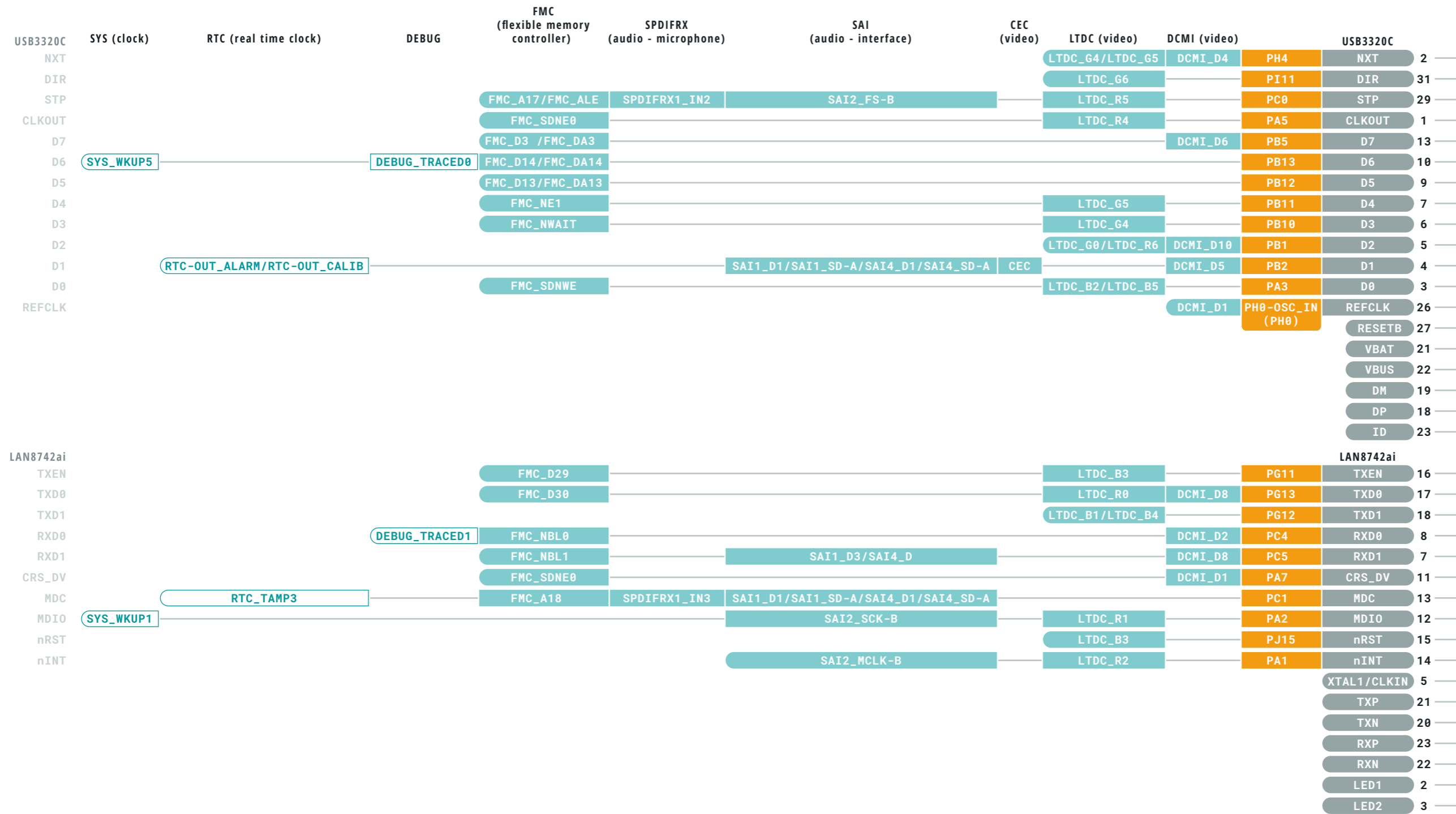**WARNING** Output current sunk by any I/O and control pin is 20 mA

ARDUINO PORTENTA H7

STORE.ARDUINO.CC/PORTENTA-H7

USB3320C

USB3320C	SYS (clock)	RTC (real time clock)	DEBUG	FMC (flexible memory controller)	SPDIFRX (audio - microphone)	SAI (audio - interface)	CEC (video)	LTDC (video)	DCMI (video)	port	USB3320C	#
NXT								LTDC_G4/LTDC_G5	DCMI_D4	PH4	NXT	2
DIR								LTDC_G6		PI11	DIR	31
STP				FMC_A17/FMC_ALE	SPDIFRX1_IN2	SAI2_FS-B		LTDC_R5		PC0	STP	29
CLKOUT				FMC_SDNE0				LTDC_R4		PA5	CLKOUT	1
D7				FMC_D3 /FMC_DA3					DCMI_D6	PB5	D7	13
D6	SYS_WKUP5		DEBUG_TRACED0	FMC_D14/FMC_DA14						PB13	D6	10
D5				FMC_D13/FMC_DA13						PB12	D5	9
D4				FMC_NE1				LTDC_G5		PB11	D4	7
D3				FMC_NWAIT				LTDC_G4		PB10	D3	6
D2								LTDC_G0/LTDC_R6	DCMI_D10	PB1	D2	5
D1		RTC-OUT_ALARM/RTC-OUT_CALIB				SAI1_D1/SAI1_SD-A/SAI4_D1/SAI4_SD-A	CEC		DCMI_D5	PB2	D1	4
D0				FMC_SDNWE				LTDC_B2/LTDC_B5		PA3	D0	3
REFCLK									DCMI_D1	PH0-OSC_IN (PH0)	REFCLK	26
											RESETB	27
											VBAT	21
											VBUS	22
											DM	19
											DP	18
											ID	23

LAN8742ai

LAN8742ai	SYS (clock)	RTC (real time clock)	DEBUG	FMC (flexible memory controller)	SPDIFRX (audio - microphone)	SAI (audio - interface)	CEC (video)	LTDC (video)	DCMI (video)	port	LAN8742ai	#
TXEN				FMC_D29				LTDC_B3		PG11	TXEN	16
TXD0				FMC_D30				LTDC_R0	DCMI_D8	PG13	TXD0	17
TXD1								LTDC_B1/LTDC_B4		PG12	TXD1	18
RXD0			DEBUG_TRACED1	FMC_NBL0					DCMI_D2	PC4	RXD0	8
RXD1				FMC_NBL1		SAI1_D3/SAI4_D			DCMI_D8	PC5	RXD1	7
CRS_DV				FMC_SDNE0					DCMI_D1	PA7	CRS_DV	11
MDC		RTC_TAMP3		FMC_A18	SPDIFRX1_IN3	SAI1_D1/SAI1_SD-A/SAI4_D1/SAI4_SD-A				PC1	MDC	13
MDIO	SYS_WKUP1					SAI2_SCK-B		LTDC_R1		PA2	MDIO	12
nRST								LTDC_B3		PJ15	nRST	15
nINT						SAI2_MCLK-B		LTDC_R2		PA1	nINT	14
											XTAL1/CLKIN	5
											TXP	21
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