

Getting Started with XMC Pinout Tool V2.1.x

Manual (Pin-)Resource Assignment Tool

public

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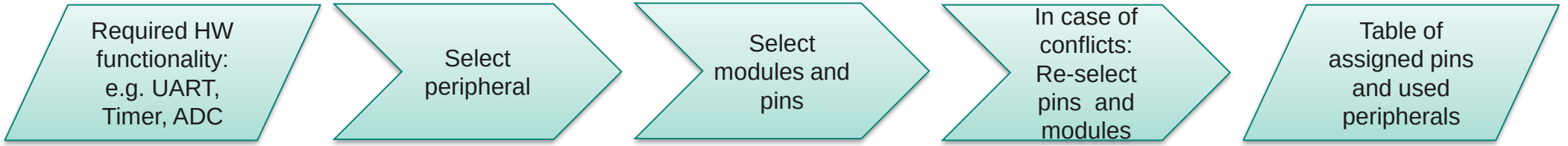
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Purpose of the XMC Pinout Tool

- The XMC Pinout Tool helps to select the required pins and modules of a peripheral
- The result is a table of assigned pins and used peripheral
- This table can be used:
  - To select the right device and package variant
  - As input for the manual pin assignment in DAVE or ModusToolbox
  - As input for the HW board design



The “XMC Pinout Tool” allows fast and easy pin mapping

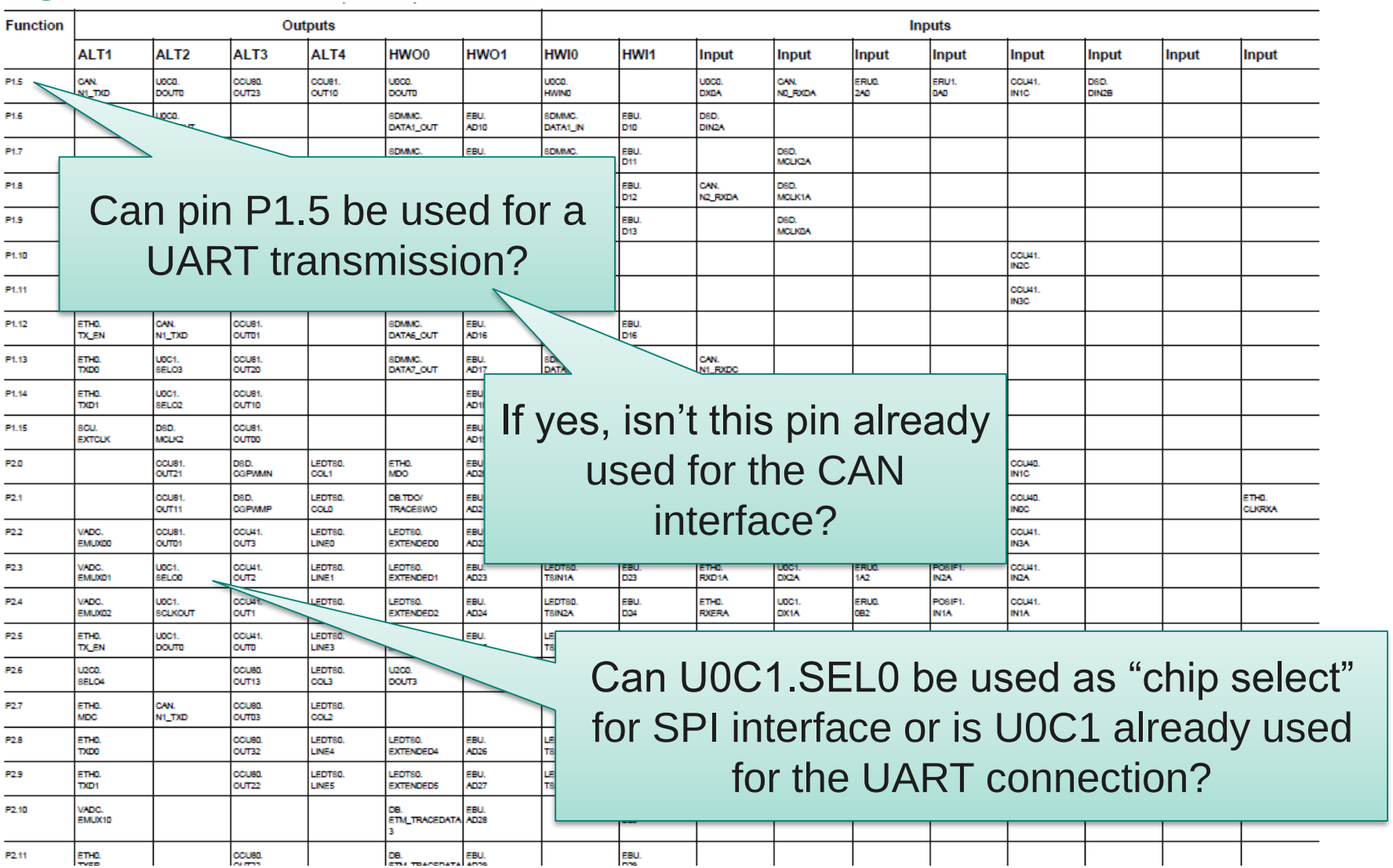
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Main Features of the XMC Pinout Tool

- Assignment of peripheral related input and output functions to a dedicated pin and module
- Identification and alerting of conflicts to avoid double assignment of pins and modules
- Graphical “Pin Table View” to find an optimal arrangement of pins for the PCB layout
- Pin specific user comments
- Save and load settings in CSV-file format
- Pin mapping information can be used in DAVE/MTB to configure the peripherals and to create the required application library

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The XMC Pinout Tool helps to find an appropriate Pin Mapping



Function	Outputs						Inputs									
	ALT1	ALT2	ALT3	ALT4	HWO0	HWO1	HWI0	HWI1	Input	Input	Input	Input	Input	Input	Input	Input
P1.5	CAN. N1_TXD	U0C0. DOUT0	CCU80. OUT23	CCU81. OUT10	U0C0. DOUT0		U0C0. HWIN0		U0C0. DXDA	CAN. N0_RXDA	ERU0. 2A0	ERU1. 0A0	CCU41. IN1C	D6D. DIN2B		
P1.6		U0C0.			SDMMC. DATA1_OUT	EBU. AD10	SDMMC. DATA1_IN	EBU. D10	D6D. DIN2A							
P1.7					SDMMC.	EBU.	SDMMC.	EBU. D11		D6D. MCLK2A						
P1.8								EBU. D12	CAN. N2_RXDA	D6D. MCLK1A						
P1.9								EBU. D13		D6D. MCLK0A						
P1.10													CCU41. IN2C			
P1.11													CCU41. IN3C			
P1.12	ETH0. TX_EN	CAN. N1_TXD	CCU81. OUT01		SDMMC. DATA6_OUT	EBU. AD16		EBU. D16								
P1.13	ETH0. TXD0	U0C1. SELO3	CCU81. OUT20		SDMMC. DATA7_OUT	EBU. AD17	SD DATA		CAN. N1_RXDC							
P1.14	ETH0. TXD1	U0C1. SELO2	CCU81. OUT10			EBU. AD1										
P1.15	SCU. EXTCLK	D6D. MCLK2	CCU81. OUT00			EBU. AD1										
P2.0		CCU81. OUT21	D6D. CGPWMN	LEDTS0. COL1	ETH0. MDO	EBU. AD2							CCU40. IN1C			
P2.1		CCU81. OUT11	D6D. CGPWMP	LEDTS0. COL0	DB.TDO/ TRACESWO	EBU. AD2							CCU40. IN0C			ETH0. CLKRXA
P2.2	VADC. EMUX00	CCU81. OUT01	CCU41. OUT3	LEDTS0. LINE0	LEDTS0. EXTENDED0	EBU. AD2							CCU41. IN3A			
P2.3	VADC. EMUX01	U0C1. SELO0	CCU41. OUT2	LEDTS0. LINE1	LEDTS0. EXTENDED1	EBU. AD23	LEDTS0. TSIN1A	EBU. D23	ETH0. RXD1A	U0C1. DX2A	ERU0. 1A2	POSIF1. IN2A	CCU41. IN2A			
P2.4	VADC. EMUX02	U0C1. SCLKOUT	CCU41. OUT1	LEDTS0.	LEDTS0. EXTENDED2	EBU. AD24	LEDTS0. TSIN2A	EBU. D24	ETH0. RXERA	U0C1. DX1A	ERU0. 0B2	POSIF1. IN1A	CCU41. IN1A			
P2.5	ETH0. TX_EN	U0C1. DOUT0	CCU41. OUT0	LEDTS0. LINE3		EBU.	LE TS									
P2.6	U2C0. SELO4		CCU80. OUT13	LEDTS0. COL3	U2C0. DOUT3											
P2.7	ETH0. MDC	CAN. N1_TXD	CCU80. OUT03	LEDTS0. COL2												
P2.8	ETH0. TXD0		CCU80. OUT32	LEDTS0. LINE4	LEDTS0. EXTENDED4	EBU. AD26	LE TS									
P2.9	ETH0. TXD1		CCU80. OUT22	LEDTS0. LINE5	LEDTS0. EXTENDED5	EBU. AD27	LE TS									
P2.10	VADC. EMUX10				DB. ETM_TRACEDATA 3	EBU. AD28										
P2.11	ETH0.		CCU80.		DB.	EBU.		EBU.								

Can pin P1.5 be used for a UART transmission?

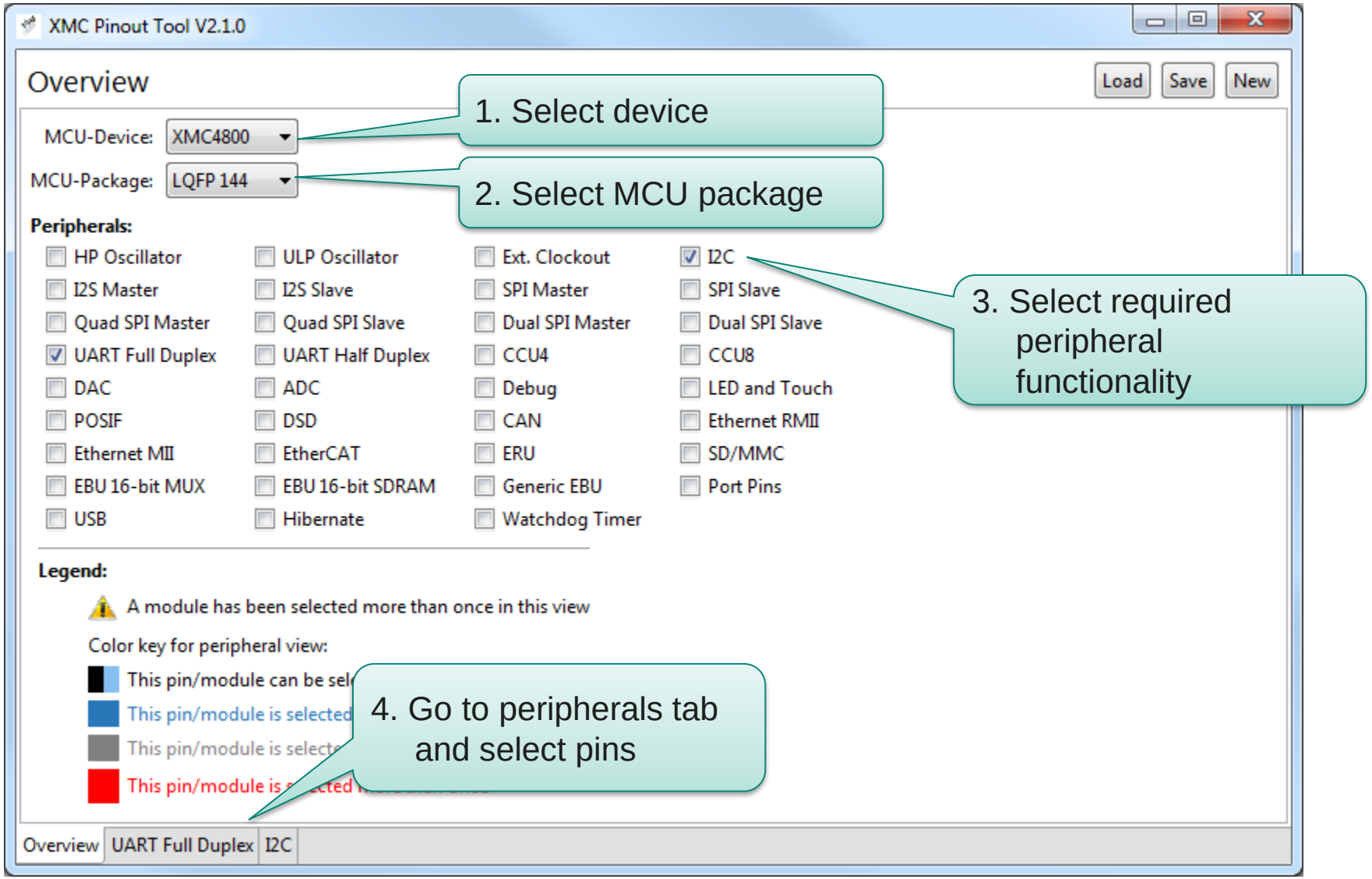
If yes, isn't this pin already used for the CAN interface?

Can U0C1.SEL0 be used as "chip select" for SPI interface or is U0C1 already used for the UART connection?

The "XMC Pinout Tool" provides answers to these questions!

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Overview Page to select the required Peripheral Functionality



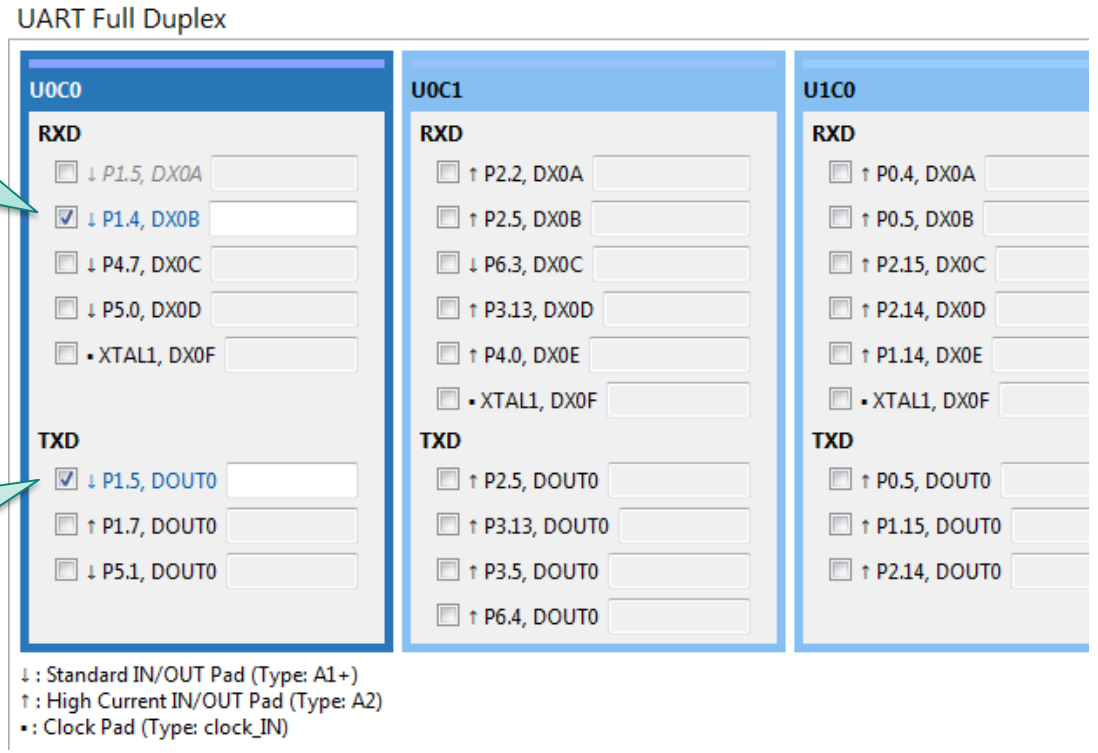
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Peripheral Page
shows the available Modules and related Pins

5. Select required pins for the specific function:

   Example: RXD signal...

...
and TXD signal for a
UART Full Duplex connection



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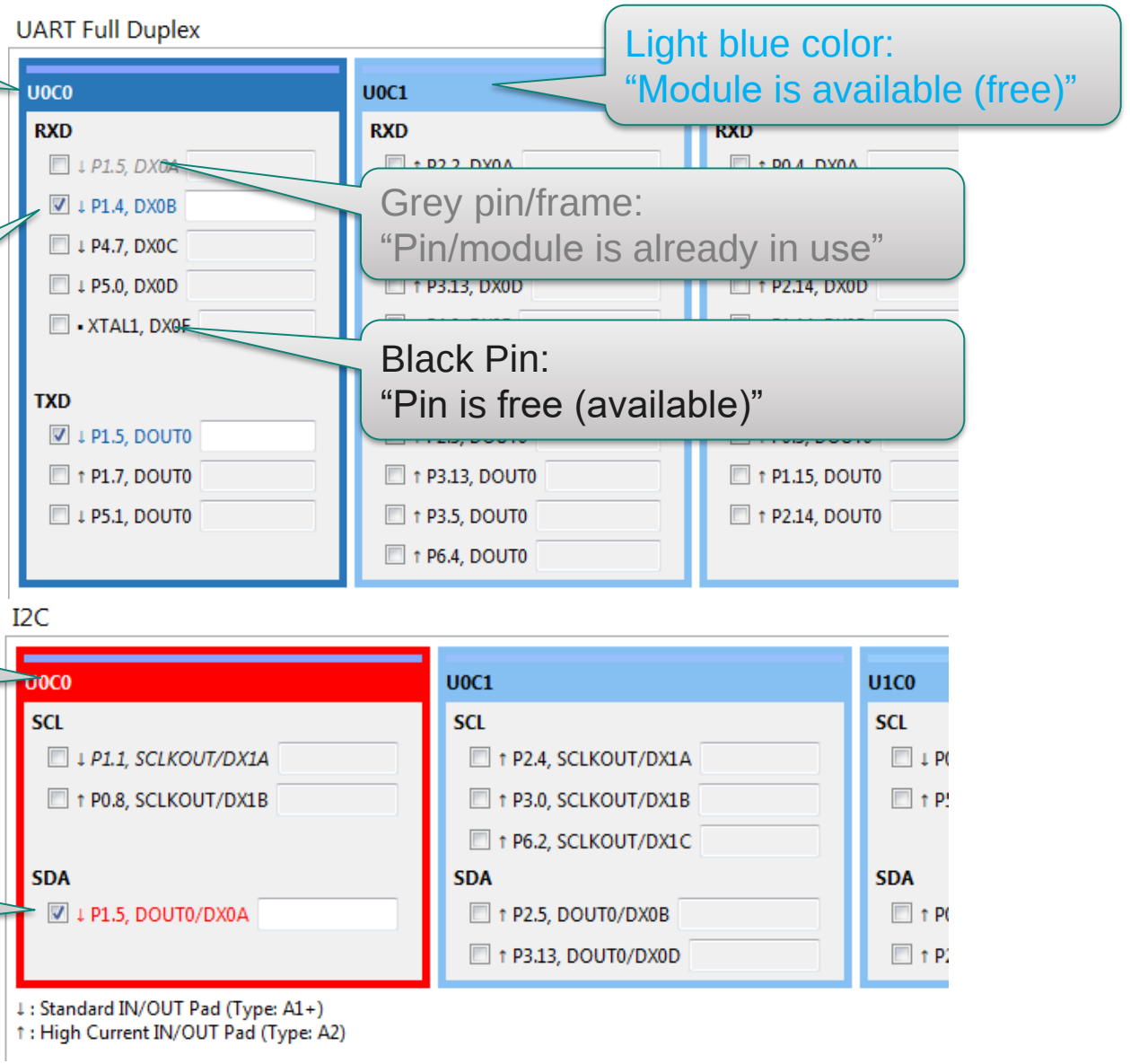
Color Code

Blue frame indicates:
“Module is in use in the current view”

Blue pin indicates:
“Pin is used (checked) in the current view”

Red frame indicates:
“Module has been assigned twice or more”

Red pin indicates:
“Pin has been assigned twice or more”



Light blue color:
“Module is available (free)”

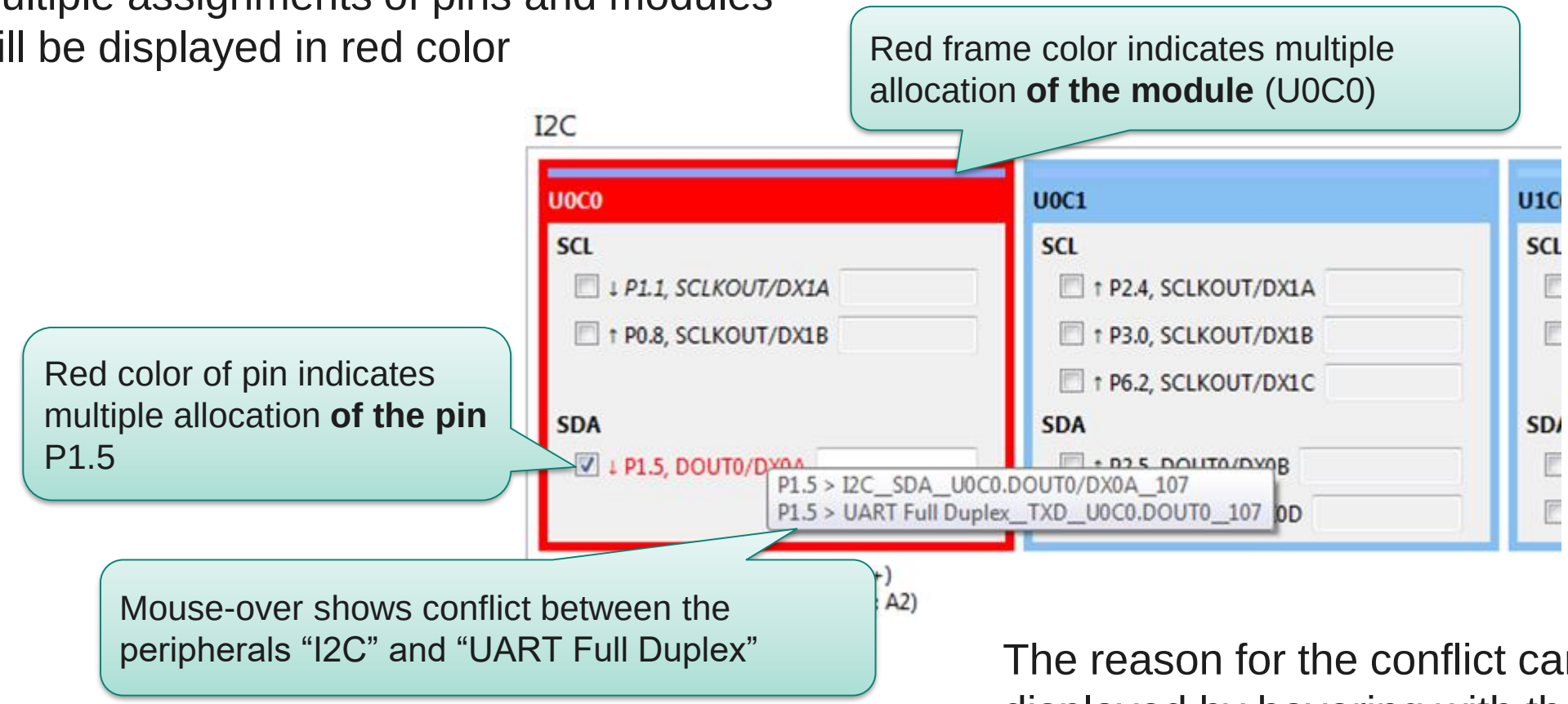
Grey pin/frame:
“Pin/module is already in use”

Black Pin:
“Pin is free (available)”

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Solve Pin Conflicts

Multiple assignments of pins and modules will be displayed in red color



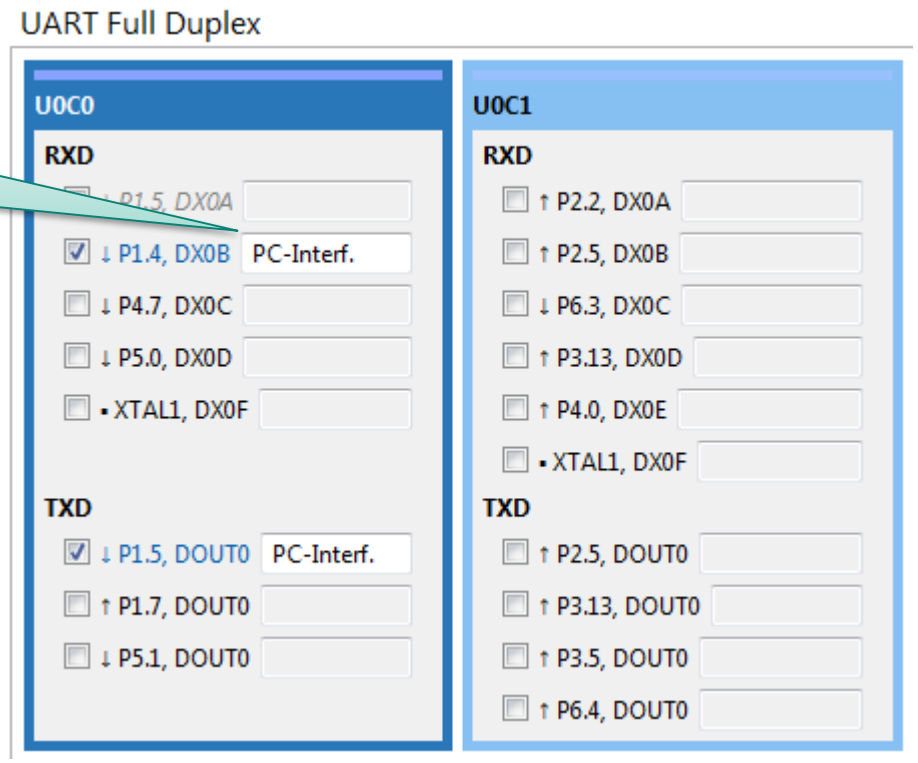
The reason for the conflict can be displayed by hovering with the mouse over the red pin or frame

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Comment Fields

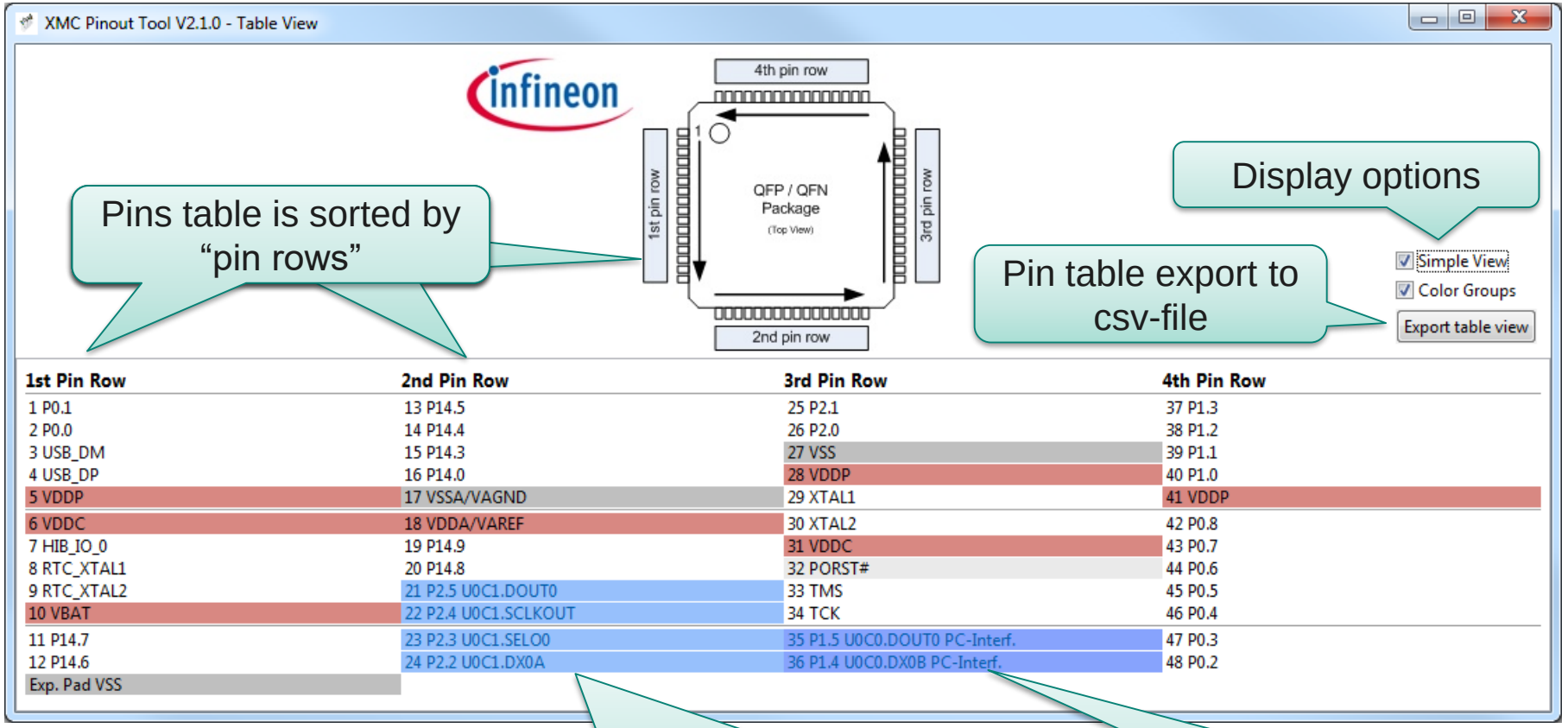
Each pin provides a field for a **user comment**.

HINT: Pressing TAB twice would move the curser to the next comment field.



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Pin Table View



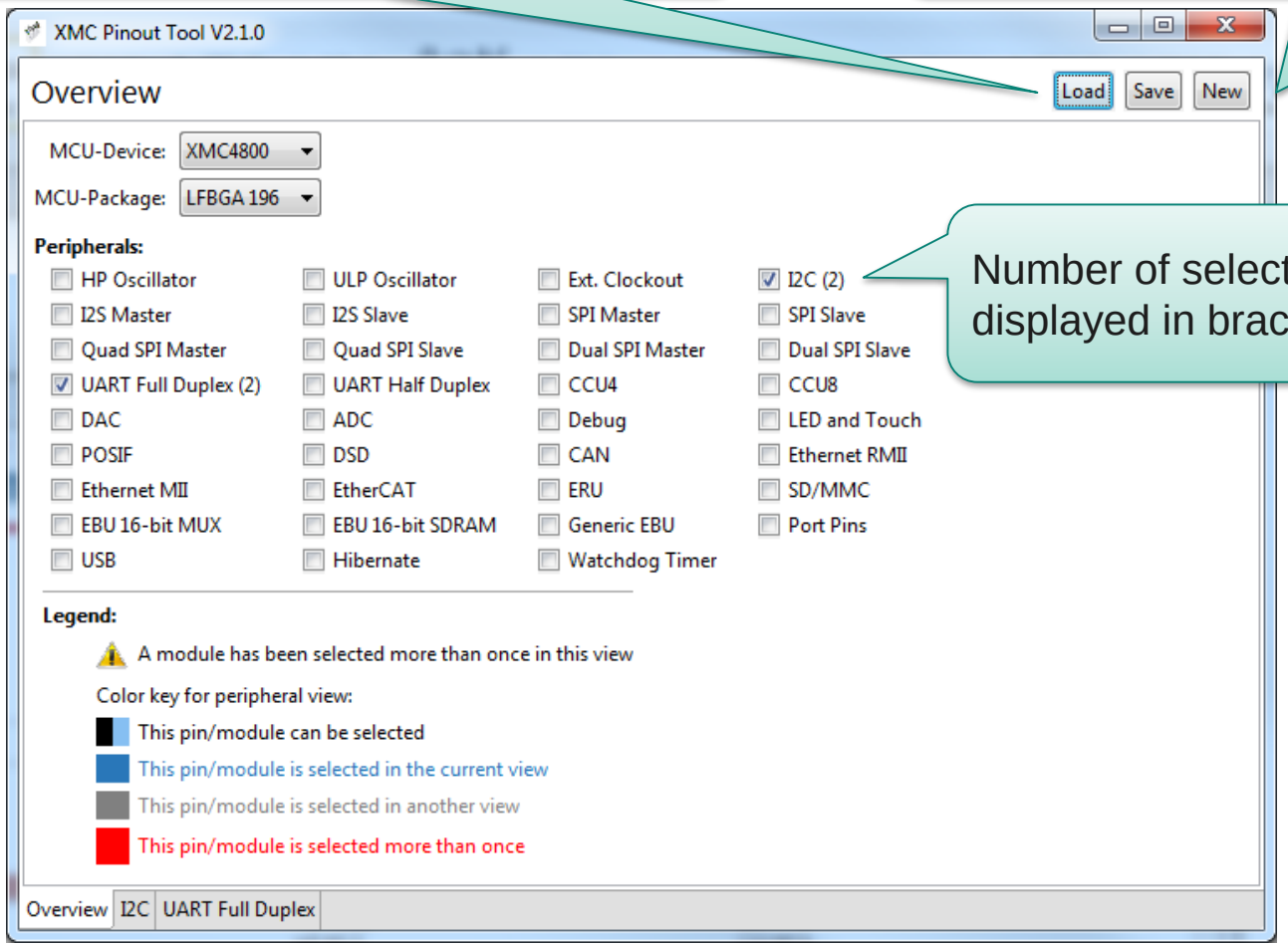
1st Pin Row	2nd Pin Row	3rd Pin Row	4th Pin Row
1 P0.1	13 P14.5	25 P2.1	37 P1.3
2 P0.0	14 P14.4	26 P2.0	38 P1.2
3 USB_DM	15 P14.3	27 VSS	39 P1.1
4 USB_DP	16 P14.0	28 VDDP	40 P1.0
5 VDDP	17 VSSA/VAGND	29 XTAL1	41 VDDP
6 VDDC	18 VDDA/VAREF	30 XTAL2	42 P0.8
7 HIB_IO_0	19 P14.9	31 VDDC	43 P0.7
8 RTC_XTAL1	20 P14.8	32 PORST#	44 P0.6
9 RTC_XTAL2	21 P2.5 U0C1.DOUT0	33 TMS	45 P0.5
10 VBAT	22 P2.4 U0C1.SCLKOUT	34 TCK	46 P0.4
11 P14.7	23 P2.3 U0C1.SELO0	35 P1.5 U0C0.DOUT0 PC-Interf.	47 P0.3
12 P14.6	24 P2.2 U0C1.DX0A	36 P1.4 U0C0.DX0B PC-Interf.	48 P0.2
Exp. Pad VSS			

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Save/Load/Delete Settings

Pin Configurations can be loaded/stored in an CSV file format.

To de-select all peripherals and pins press „New“



Number of selected pins displayed in brackets (x)

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CSV File Content

DEVICE_NAME	PACKAGE_NAME	VERSION_NO
XMC4700	LQFP 144	V1.0.102

PIN_NO	PHYSICAL_PIN	PERIPHERAL_NAME	MODULE_NAME	SIGNAL_NAME	PIN_NAME	COMMENT
141	P0.5	Ethernet RMII	ETH0	Transmit Data	TXD0	
142	P0.4	Ethernet RMII	ETH0	Transmit Data	TX_EN	
143	P0.3	Ethernet RMII	ETH0	Receive Data	RXD1B	
144	P0.2	Ethernet RMII	ETH0	Receive Data	RXD0B	
1	P0.1	Ethernet RMII	ETH0	Control	CRS_DVB	
2	P0.0	EtherCAT	ECAT0	Phy Management	PHY_RST	
29	P15.3	EtherCAT	ECAT0	Control	P1_LINKB	
30	P15.2	EtherCAT	ECAT0	Control	P1_RX_ERRB	
128	P0.7	EtherCAT	ECAT0	Status	LED_ERR	
140	P0.6	Ethernet RMII	ETH0	Transmit Data	TXD1	
35	P14.7	EtherCAT	ECAT0	Receive Data	P1_RXD0B	
38	P14.4	EtherCAT	ECAT0	Control	LATCH1A	
36	P14.6	EtherCAT	ECAT0	Clock	P1_RX_CLKB	
111	P1.1	SD/MMC	SDMMC	Control	SDWC	
37	P14.5	EtherCAT	ECAT0	Control	LATCH0A	
115	P1.7	SD/MMC	SDMMC	Data	DATA2_IN&DATA2_OUT	
114	P1.8	EtherCAT	ECAT0	Transmit Data	P0_TXD2	
74	P2.0	Ethernet RMII	ETH0	Phy Management	MDO&MDIB	
73	P2.1	Ethernet RMII	ETH0	Clock	CLK_RMIIA	
116	P1.6	SD/MMC	SDMMC	Data	DATA1_IN&DATA1_OUT	

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Install and Run the XMC Pinout Tool V2.1.x

- **Download** the XMC Pinout Tool V2 from
  https://www.infineon.com/cms/en/product/microcontroller/32-bit-industrial-microcontroller-based-on-arm-cortex-m/32-bit-xmc1000-industrial-microcontroller-arm-cortex-m0/#!?fileId=5546d4624d6fc3d5014d712974bb02a9
- **Extract** the folder inside the zipped archive „XMC Pinout Tool V2.x.x.zip“ to your favorite place
- To start the XMC Pinout Tool **double-click** on the „**XMC Pinout Tool V2.x.x.exe**“ file
- In case the XMC Pinout Tool does not work, make sure you have installed the latest JAVA version from https://www.java.com/de/download/

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