Never stop thinking

32-Bit

Microcontroller

TriBoard TC2X3

Hardware: TriBoard-TC2X3 V1.1
Hardware Manual

User's Manual

V 1.2 2014-10

Microcontrollers

Edition 2014-10

Published by
Infineon Technologies AG
81726 Munich, Germany

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Revision History: V 1.2 2014-10

Previous Versions:1,1

Page	Subjects (major changes since last revision)
–	correct portnumber for LEDs to P11
–	correct figure 3-2 name
–	Remove unavailable signal names in description

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1 Introduction

We congratulate you on your purchase of the TriCore Evaluation Board. This kit is a versatile tool, providing quick access to the capabilities of TriCore's powerful architecture.

Applications can be developed easily. The Evaluation Board is equipped with a variety of memories and peripherals for connection to the environment. There is also an interface for the On Chip Debugging Features (OCDS1 and DAP). The kit also includes several sets of development tools, which are stored on the included Evaluation Board CD-ROM.

The Evaluation Board allows easily the development of TriCore applications with the corresponding tools.

Subsequently, the applications can be downloaded and can be tested with the powerful debugger software.

This TriBoard Hardware Manual familiarizes you with the TriCore Evaluation Board and guides you through the initial configuration of the TriBoard.

For detailed technical information about the TC2X3 (e.g. TC233) please refer to the User Manual of the device.

2 TriBoard Features

2.1 Summary of Features

- Infineon's TC2X3 (TC233, TC223, TX213) Controller in TQFP-100 Package with 0,4mm pitch
- FlexRay Transceivers
- Safety device (optional)
- High Speed CAN Transceivers
- USB to UART bridge
- Serial Eeprom
- LIN Transceiver
- Crystal 20MHz (default) or External Clock
- USB miniWiggler JDS for easy debugging
- 8 Low Power Status LEDs
- 8-DIP switches for configuration
- access to all pins of controller
- 100mm x 160mm (EURO-Board)
- optional power supply via USB

Connectors

The TC2X3 TriBoard offers a wide variety of connectors:

- Standard power connector
- Micro USB connector for ASC Interface (ASC0) and miniWiggler
- 16-pin header for JTAG interface (OCDS)
- 10-pin header for DAP
- 10pin (2x5) Header for LIN Transceiver (LIN)
- 2 x 10pin (2x5) Header for CAN High Speed Transceiver (CAN0 and CAN1)
- 2 x 10pin (2x5) Header for FlexRay (ERAY-A and ERAY-B)
- four 80-pin connectors (male) + four 80-pin connectors (female) with all I/O signals
- optional ETK connector

Components

- Infineon's Next generation micro controller supply TLE 7368-3E
- Three LEDs to validate power supply (5Volt / 3,3 Volt / 1,3 Volt)
- LED indicating /HDRST (ESR0) active state
- LED indicating activ miniWiggler JDS
- LED switched via DAS software
- 2x Infineon's FlexRay Transceiver TLE9221SX
- 2x Infineon's High Speed CAN-Transceiver TLE 6250 G
- Infineon's LIN-Transceiver TLE 7259-2GE
- Infineon's Safety Device SAK-CIC61508 (optional)
- USB to UART bridge FT2232HL (FTDI)

- SPI eeprom (Atmel)
- 8 general purpose LEDs
- Reset switch
- 4-pin Dip switch

Zero Ohm Bridges

Zero Ohm resistors give the flexibility to configure the systems functionality

2.2 Block Diagram

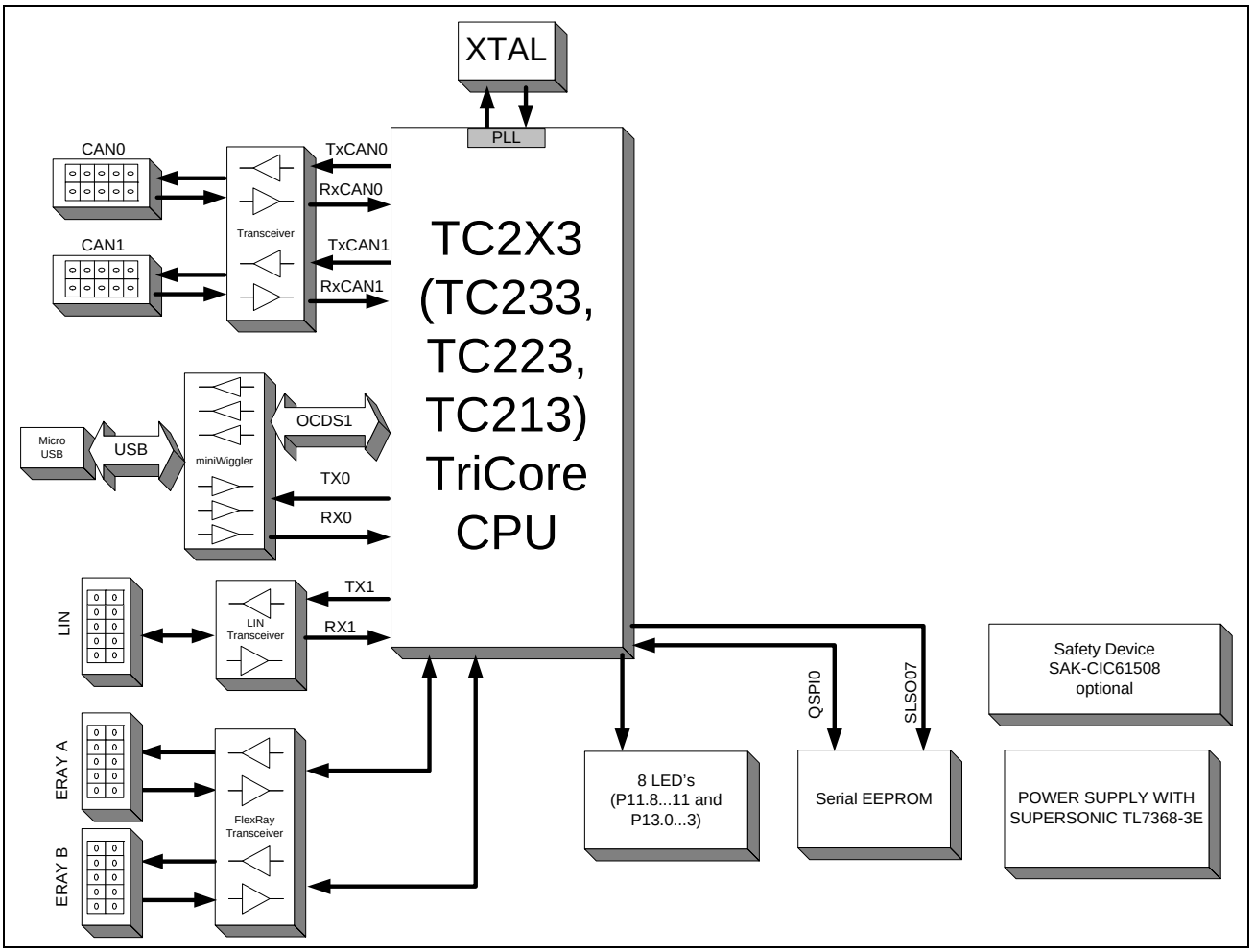

Figure 2-1 TriBoard Block Schematic

2.3 Placement

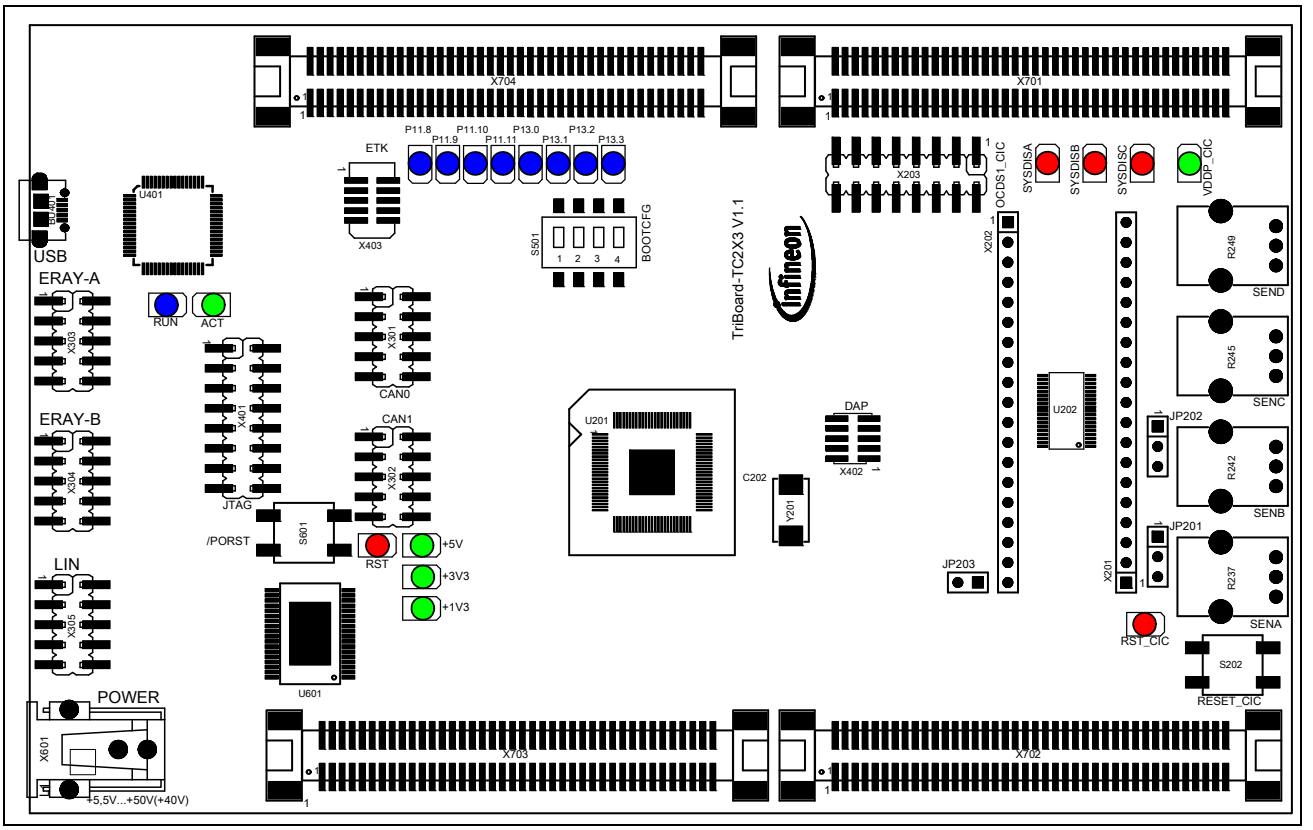

Figure 2-2 TriBoard TC2X3 V1.1 Placement

3 TriBoard Information

3.1 Power Supply

The microcontroller needs 2 or 3 different supply voltages. This voltages are generated internally via Infineons Next generation microcontroller supply TLE 7368-3E (+5V; +3,3V; +1,3V) or via the microcontroller itself (+1,3V).

Applying a stable supply voltage causes the power on reset after a short period. The three LED's (+5V, +3.3V, +1V3) indicate the status of the on board generated voltages.

The default case for powering the device is:

generate +5V and +3,3V by TLE 7368-3E or get +5V by USB connector and generate +3,3V by TLE 7368-3E and +1,3V by the microcontroller.

A manual power on reset is executed by pressing the reset button.

There are 2 possibilties for power the board from external: via supply connector (+5V is generated by TEL 7368-3E) or via Micro USB connector (direct supply from USB port with +5V).

3.1.1 Power via supply connector (X601)

The Board has to be connected to a +5,5V to +50V (+40V) DC power supply. Maximum power supply is reduced to +40V if the SAK-CIC61508 option is assembled .

The power consumption is not specified yet but a supply with 6V and 600mA should be sufficient. The pinout for the supply connector is shown in **Figure 5-3**. There can be used any standard power pack with a connector where the positive line is surrounded by the ground line.

Please note: The SAK-CIC61508 option is only powered via X601.

3.1.2 Power via Micro USB (BU401)

The Board can also be powered by the Micro USB connector. The power consumption is not specified yet but make sure that the USB port can deliver 500mA. Because the unspecfified power consumption (dependant of using the board) it is possible that the board need more than 500mA which can be delivered by an USB port. To make sure that you don’t have a problem with overload on one USB port please use a y cable which is connected to two USB port on the pc to get more power.

The pinout for the USB connector is shown in **Figure 5-4**.

When you will power the board via USB then you must disconnect the TLE 7368-3E. You can do this by removing resistor R638. For powering the board with a PC you must assemble resistor R458 with 0R. When you will power the board with a standard cellular charger then make sure that the voltage of the charger is 5V and you must assemble resistor R457 with 0R.

Make sure that only one of the resistors R638 or R457 (all resistors are red marked in **Figure 3-1**) is assembled each time..

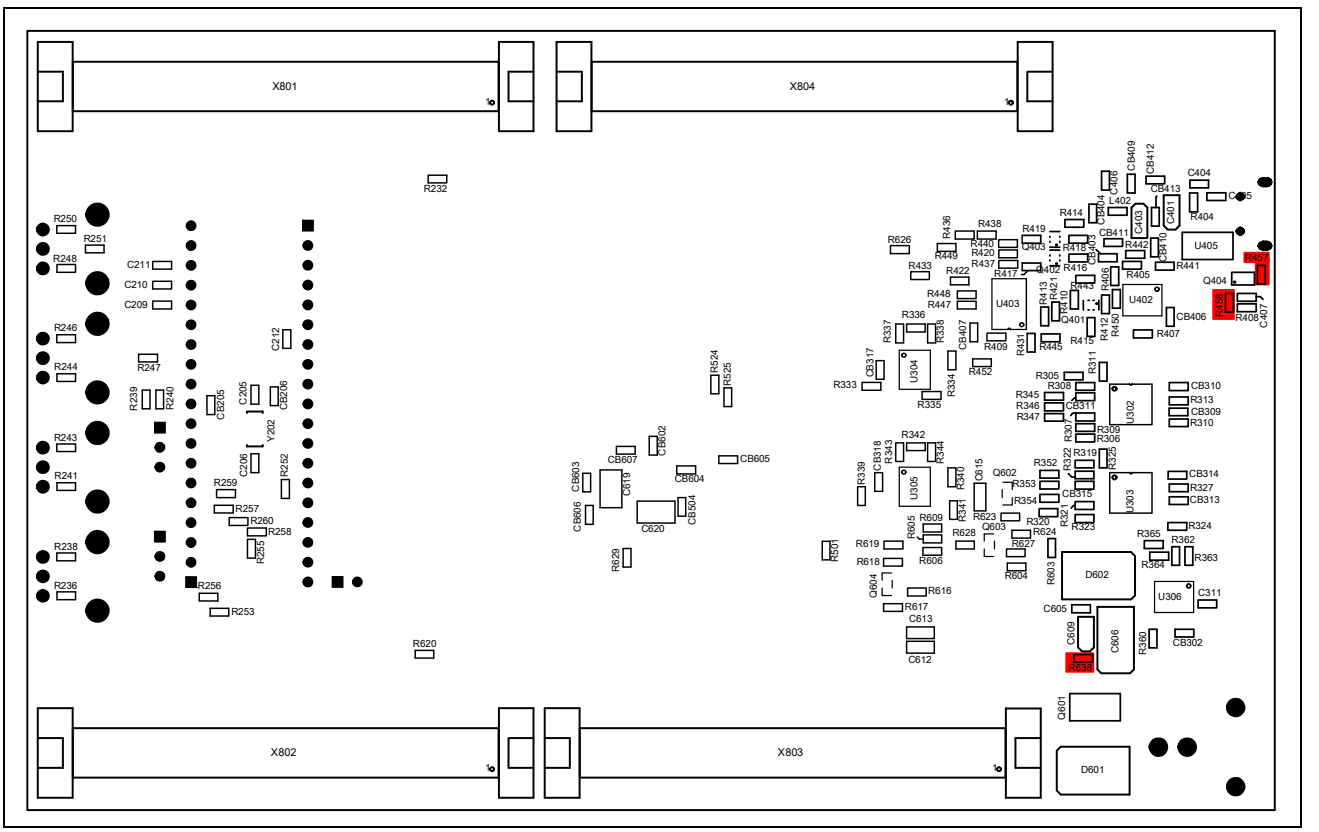

Figure 3-1 Resistors for power supply

3.2 LEDs

There are 14 or 19 LEDs on board:

- D501 up to D508 (blue) -> toogle LEDs connected to P11.8 ...11 and P13.0...3
- D604 RST (red) -> RESET LED indicate the reset state of the board
- D505 +1V3 (green) -> +1V3 power supply indication
- D606 +3V3 (green) -> +3,3V power supply indication
- D607 +5V (green) -> +5V power supply indication
- D402 ACT (green) -> on board miniWiggler JDS is ACTIV
- D401 RUN (blue) -> Debug RUN mode (switched by DAS Server)
- D204 RST_CIC (red)-> RESET LED indicate that the CIC is in reset
- D205 +VDDP_CIC (green)-> +VDDP for CIC power supply indication (+3,3V)
- D201 SYSDISA (red)-> System Disable A (switched by CIC)
- D202 SYSDISB (red)-> System Disable B (switched by CIC)
- D203 SYSDISC (red)-> System Disable C (switched by CIC)

3.3 Clock

On the board is a fixed crystal wiith 20MHz assembled. You can change this by replacing Y201 (soldered).

3.4 USB Connector

The USB connector is used for connection to a PC. Via the USB it is possible to power the board, using the ASCLIN0 as serial connection via USB and Debugging via DAS. For the pinout of USB socket see **Figure 5-4**.

NOTE: Before connecting the board to the PC, make sure that the actual DAS software is installed on the PC. For actual DAS software please contact your local FAE.

The software can also be found on the

DAS website

3.4.1 Serial Connection to PC

After the first connection of USB to a PC the needed driver will be installed automatically. During this there will be created a new COM port on PC. This COM port can be used to communicate with the board via ASCLIN0 of the device. Per default the ASCLIN0 is used on P15.2 and P15.3. For using the ASCLIN0 on P14.0 and P14.1 (e.g. Generic Bootstrap Loader) you must remove R339 (connection to CAN transceiver), R440, R438 and

assemble R436 and R437 with 0R (red marked in **Figure 3-2**). Please note that in this case CAN0 is longer working.

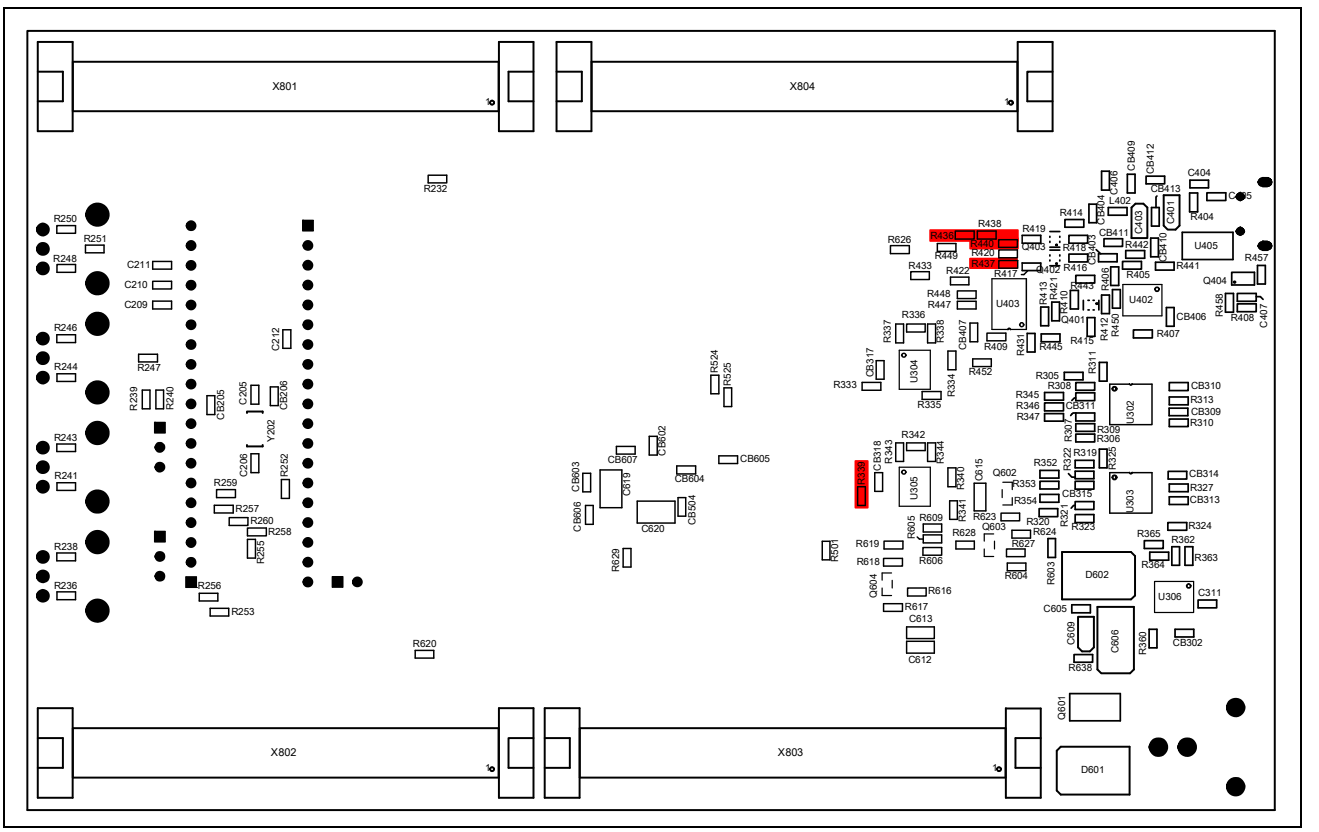

Figure 3-2 Resistors for ASC connection (ASC0)

3.4.2 miniWiggler JDS

The miniWiggler JDS is a low cost debug tool which allows you access to the JTAG of the device. Make sure that you have the latest DAS release. Debugging is possible via the DAS Server ‘UDAS‘. Please contact your prefered debug vendor for support of DAS.

If you have connected the board to the PC and there runs the DAS server, then a working connection is visible via the green ACTIV LED.

The status RUN LED is switched on/off through the DAS Server, depending on the used debugger (client).

IMPORTANT: Make sure that there is no or a tristated connection on X401 (OCDS1) and X402 (DAP) if the ACTIV LED is on.

3.5 FlexRay (only with TC233)

The board has 2 IDC10 plugs for FlexRay Communication with up to 10 Mbit/s. For the pinout of the plugs see **Figure 5-5**. You can use a IDC female connector with

crimpconnector, flat cable and SUB-D 9 plug with crimpconnector to have a 1:1 adapter to SUB-D 9.

The transceiver are connected directly to the TriCore device.

For more information look in the user manual for TC2X3. Only usable with TC233.

3.6 Serial Eeprom

The QSPI0 of the TC2X3 is connected to a serial EEPROM with a size of 128K (16.384 x 8). As chip select for this EEPROM is used the line SLSO07 (P33.5). To disconnect (disable) the EEPROM remove resistor R302.

3.7 MultiCAN

On the board are two CAN transceiver connected to the MultiCAN on TC2X3 node 0 and 1. The transceivers are connected to two IDC10 plug. For the pinout of IDC10 plug see **Figure 5-6**. You can use a IDC female connector with crimpconnector, flat cable and SUB-D 9 plug with crimpconnector to have a 1:1 adapter to SUB-D 9.

3.8 LIN

On the board is one LIN transceiver connected to the ASCLIN1 on TC2X3. The transceiver are connected to one IDC10 plug. For the pinout of IDC10 plug see **Figure 5-7**. You can use a IDC female connector with crimpconnector, flat cable and SUB-D 9 plug with crimpconnector to have a 1:1 adapter to SUB-D 9.

3.9 Safety option with SAK-CIC61508 (optional)

The safety device is only assembled if the board is with the safety option.

The SAK-CIC61508 is connected to the ASCLIN1 of the microcontroller and use the line P20.8 as chip select.

There are 4 LED’s for indication the state of the safety device (SYSDISA, SYSDISB, SYSDISC, VDDP_CIC).

On this board exists 4 potentiometer to stimulare the sense inputs of the safety device.

Sensor inputs A and B can be connect to a potentiometer (JP201, JP202 , pos. 2-3) or to the core voltage of the microcontroller (JP201, pos. 1-2) for input A or to the port voltage of the microcontroller (JP202, pos. 1-2) for input B.

With switch S202 it is possible to reset the safety device. If JP203 is set, then with S202 is also reset the microcontroller and the safety device is reset by a power on reset of the microcontroller.

The safety device can be reprogrammed via JTAG connector X203.

3.10 Other peripherals

For all other peripherals there are no special plugs on the board. The peripheral signals are available on the different connectors. See **“Connector Pin Assignment” on Page 5-1**.

Note: - SLSO07 is used as chip select for the serial eeprom on board.

3.11 Toggle LED’s

Port 11pin 8 up to pin 11 and Port 13 pin 0 up to pin 3 are connected to single LED’s (D501... D508) and can be controlled by Software. This status LED’s are low active.

3.12 Debug System

3.12.1 OCDS1

The OCDS1 signals are connected to the IDC16 plug (X401). They work with the port supply of +3.3V. For pinout of the connector see **Figure 5-8**. You can connect any debugger to this connector.

The signals /BRKIN and /BRKOUT are not connected per default. If you need this signals in the connector then assemble R425 and R424 with a 0R resistor.

If you connect a debug hardware make sure that the miniWiggler JDS (see **“miniWiggler JDS” on Page 3-4**) is not activ (ACTIV LED is off) and on the DAP connector (X402) is no hardware connected or the hardware is tristated.

If the ACTIV LED is on, then stop the active DAS Server ’UDAS’ and/or remove the USB connection to the PC.

3.12.2 DAP

The board comes with a DAP connector (X402). For pinout of this connector see **Figure 5-9**. You can connect a DAP hardware here. If you use this connector make sure that the miniWiggler JDS is not activ (ACTIV LED is off) and a connected OCDS1 hardware is disconnected or tristated.

3.12.3 High speed with DAP

For use the DAP connection with 160 MHz you need to remove 3 resistors to have a very short connection between device and connector. On the TC2X3 Triboard this 3 resistors are R211, R212 and R217 (red marked in **Figure 3-3**). This resistors needs to be removed.

Important: When the resistors are removed then only the DAP connector on the board can be used. The on board wiggler and the OCDS1 connector couldn't be use (are disconnected) in this case.

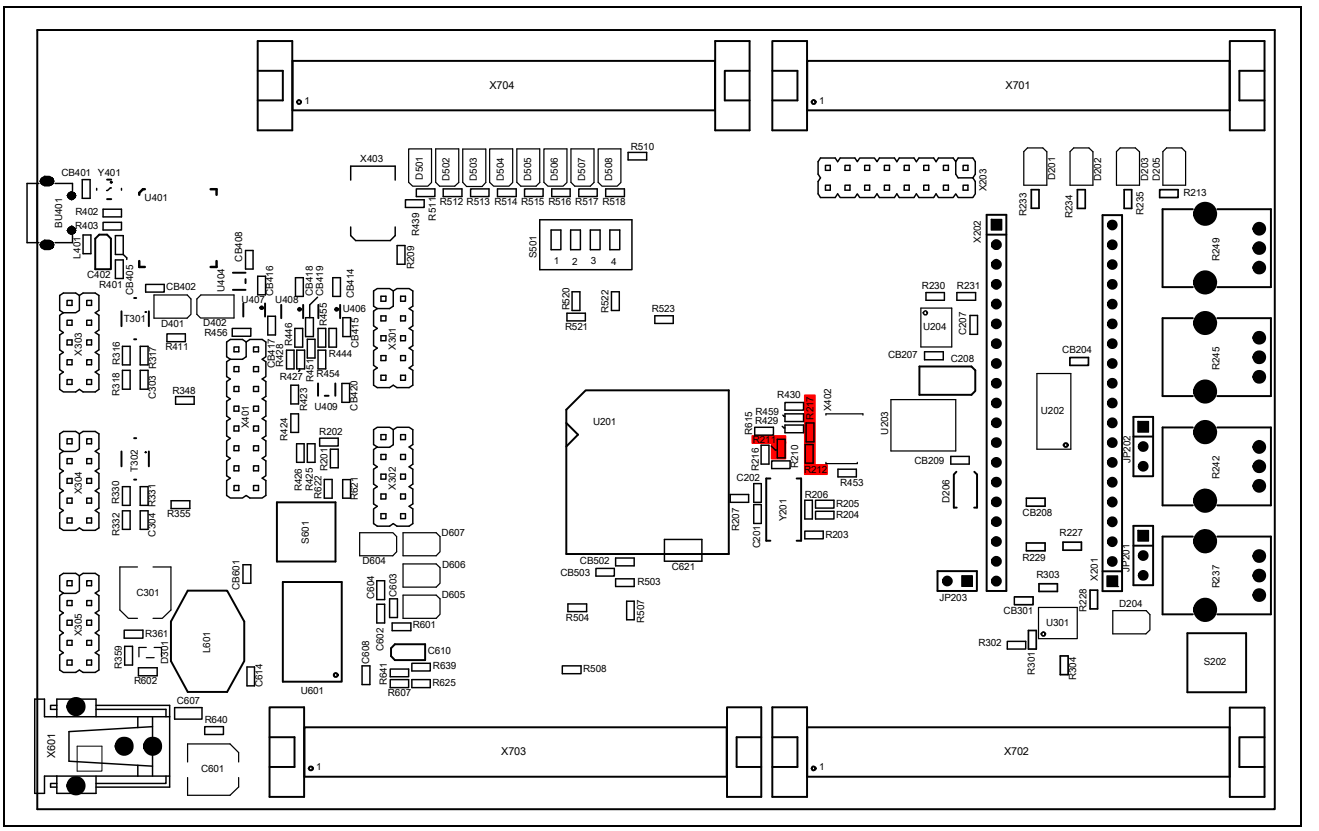

Figure 3-3 Resistors for high speed DAP

4 TriBoard Configuration

4.1 HW Boot Configuration

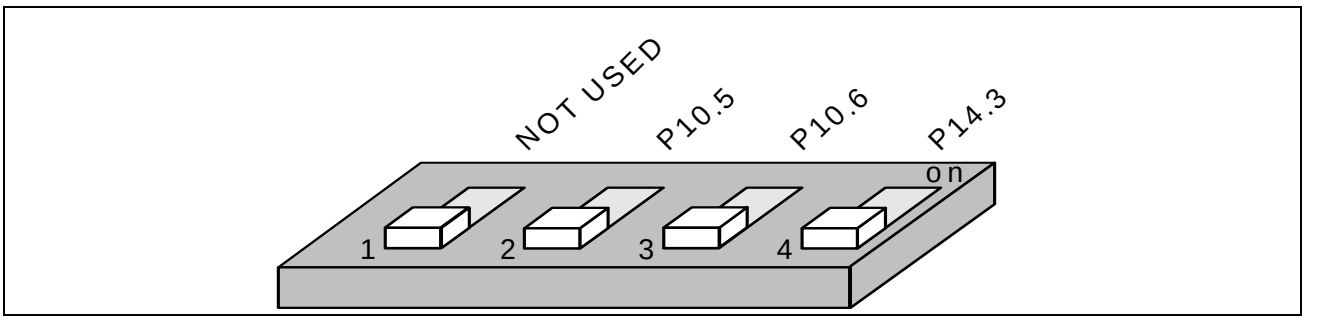

Figure 4-1 HW Configuration TC2X3 DIP-Switch

The picture above shows the definition of the boot HW configuration switch. The meaning of the switches will be described in the following table (**Table 4-1**).

Note: The ON position of the switch is equal to a logical LOW at the dedicated pin.

Note: Switch 1 is not connected and don't have any function.

Table 4-1 User Startup Modes for TC233,TC223, TC213

Note: The shadowed line indicates the default setting.

Note: 'x' represents the don't care state.

Note: 2 to 4 are the Dip Switch numbers

HWCFG[5...3]	Type of Boot TC233, TC223, TC213	2	3	4
XX1	Start-up mode is selected by Boot Mode Index	X	X	OFF
110	Internal Start from Flash	OFF	OFF	ON
100	Alternate Boot Mode, Generic Bootstrap Loader on fail	ON	OFF	ON

Table 4-1 User Startup Modes for TC233,TC223, TC213

Note: The shadowed line indicates the default setting.

Note: 'x' represents the don't care state.

Note: 2 to 4 are the Dip Switch numbers

HWCFG[5...3]	Type of Boot TC233, TC223, TC213	2	3	4
010	Alternate Boot Mode, ASC Bootstrap Loader on fail	OFF	ON	ON
000	Generic Bootstrap Loader	ON	ON	ON

4.2 Assembly Options

Table 4-2 General optional resistors

Component	Description
R202	Connect P20.2 (/TESTMODE) to GND (default: not assembled)
R206	XTAL Rparallel (default: not assembled)
R207	XTAL Rserial (default: assembled)
R423	Connect P21.6 with miniWiggler JDS (default: not assembled)
R424	Connect P21.6 with OCDS1 connector (default: not assembled)
R425	Connect P21.7 with OCDS1 connector(default: not assembled)
R426	Connect P20.2 with OCDS1 connector(default: not assembled)
R427	Connect P21.7 with USR1 of miniWiggler JDS (default: not assembled
R428	Connect P20.2 with USR1 of miniWiggler JDS (default: not assembled
R429	Connect P21.7 with USR1 of DAP (default: not assembled
R430	Connect P20.2 with USR1 of DAP (default: not assembled
R459	Connect /TRST with USR1 of DAP (default: not assembled
R510	Connect +3,3V to all toggle LEDs (default: assembled)
R623	Connect reset switch with /PORST(default: assembled)
R624	Connect reset switch with /ESR0 (default:not assembled)
R604	Connect P00.0 with MONSTBY of power device (default: not assembled)
R606	Connect P33.9 with WDO of power device (default: not assembled)
R609	Connect P33.10 with WDI of power device (default: not assembled)

Note: All resistors are red marked in the following figures

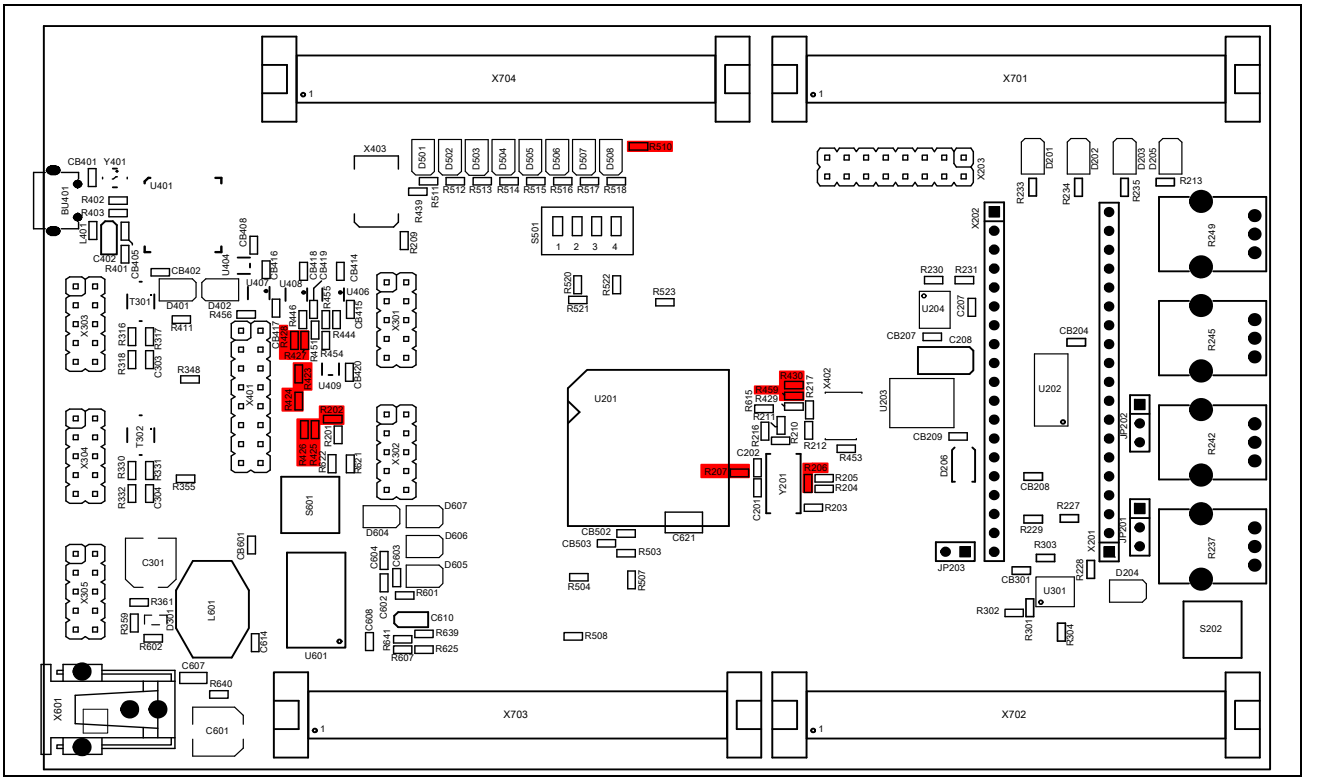

Figure 4-2 Location of general optional resistors on Top Side

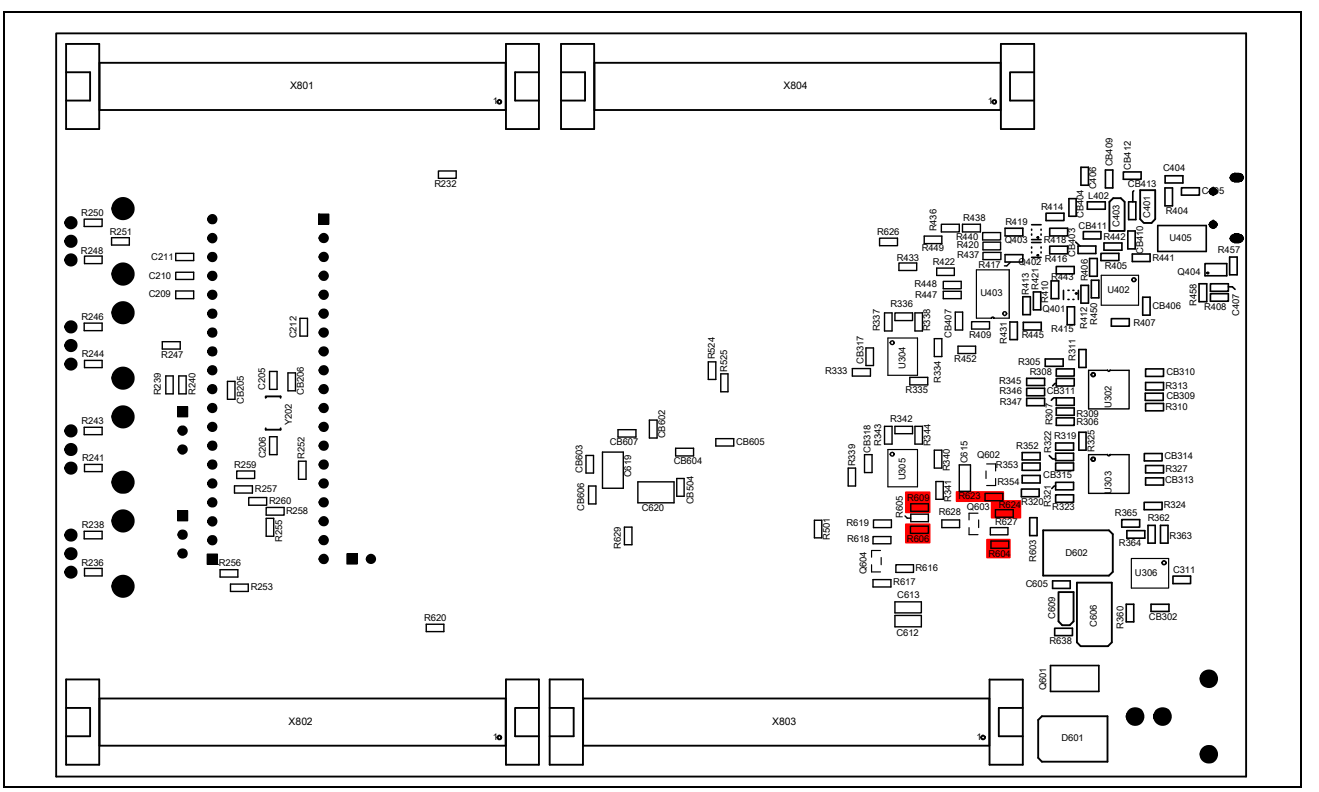

Figure 4-3 Location of general optional resistors on Bottom Side

Table 4-3 Resistors for peripherals

Component	Description
R333	Connect P33.7 with RXD of CAN0 transceiver (default: assembled)
R339	Connect P14.1 with RXD of CAN1 transceiver (default: assembled)
R302	Connect P33.5 (SLSO07) with /CS of Eeprom (default: assembled)
R364	Connect P20.9 with RXD of LIN1 transceiver (default: assembled)
R365	Connect P20.10 with TXD of LIN1 transceiver (default: assembled)
R345	Connect P02.0 with TXD of ERAY-A transceiver (default: assembled)
R346	Connect P02.4 with TXDEN of ERAY-A transceiver (default: assembled)
R347	Connect P02.1 with RXD of ERAY-A transceiver (default: assembled)
R348	Connect P15.5 with ERRN of ERAY-A transceiver (default: assembled)
R305	Connect P11.2 with EN of ERAY-A transceiver (default: not assembled)
R306	Connect P11.6 with STBN of ERAY-A transceiver (default: not assembled)
R352	Connect P02.2 with TXD of ERAY-B transceiver (default: assembled)
R353	Connect P02.5 with TXDEN of ERAY-B transceiver (default: assembled)
R354	Connect P02.3 with RXD of ERAY-B transceiver (default: assembled)
R355	Connect P11.6 with ERRN of ERAY-B transceiver (default: assembled)
R319	Connect P10.5 with EN of ERAY-B transceiver (default: not assembled)
R320	Connect P10.6 with STBN of ERAY-B transceiver (default: not assembled)
R440	Connect P15.3 with TXD of USB to UART (default: assembled)
R438	Connect P15.2 with RXD of USB to UART (default: assembled)
R437	Connect P14.1 with TXD of USB to UART (default: not assembled)
R436	Connect P14.0 with RXD of USB to UART (default: not assembled)
R503	Connect VAREF with VDDM (default: assembled)
R504	Connect VAGND with VSSM (default: assembled)
R507	Connect +5V with VDDM (default: assembled)
R508	Connect +3,3V with VDDM (default: not assembled)
R501	Connect GND with VSSM (default: assembled)

Note: All resistors are red marked in the following figures

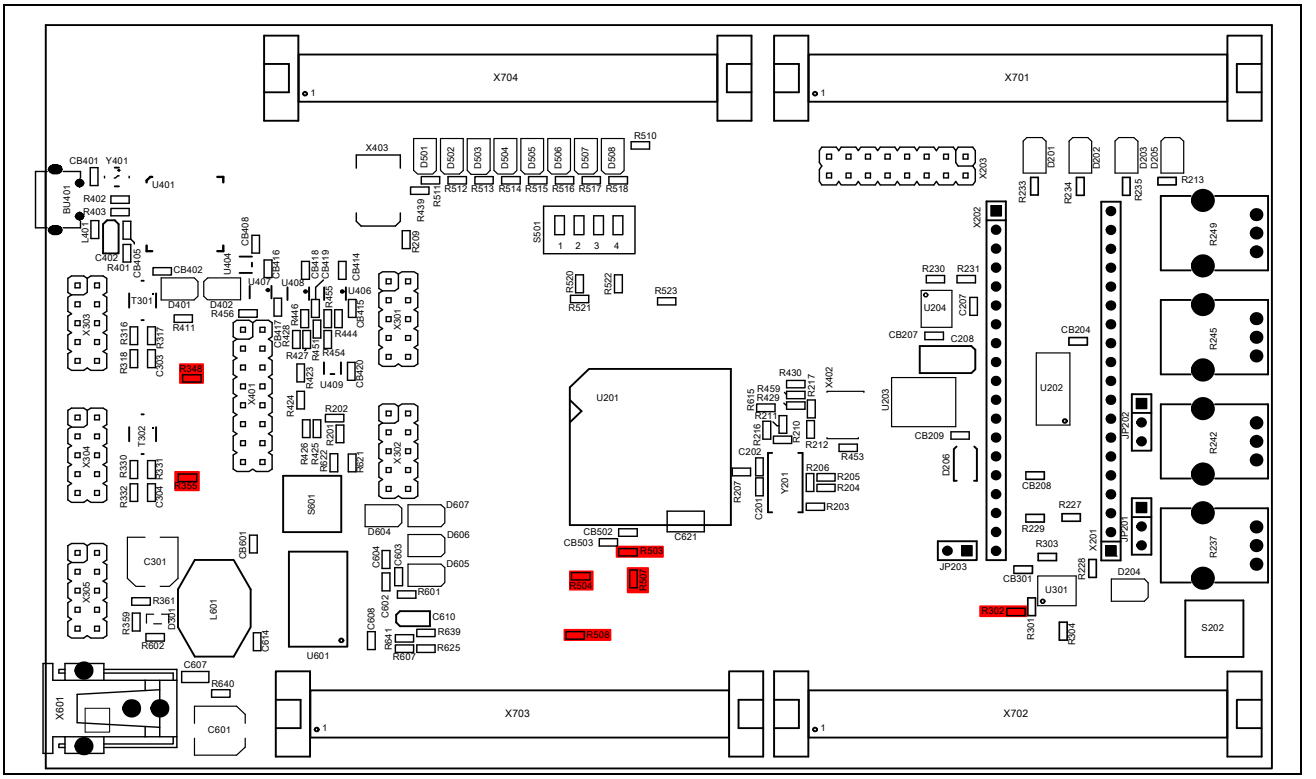

Figure 4-4 Location of peripheral resistors on Top Side

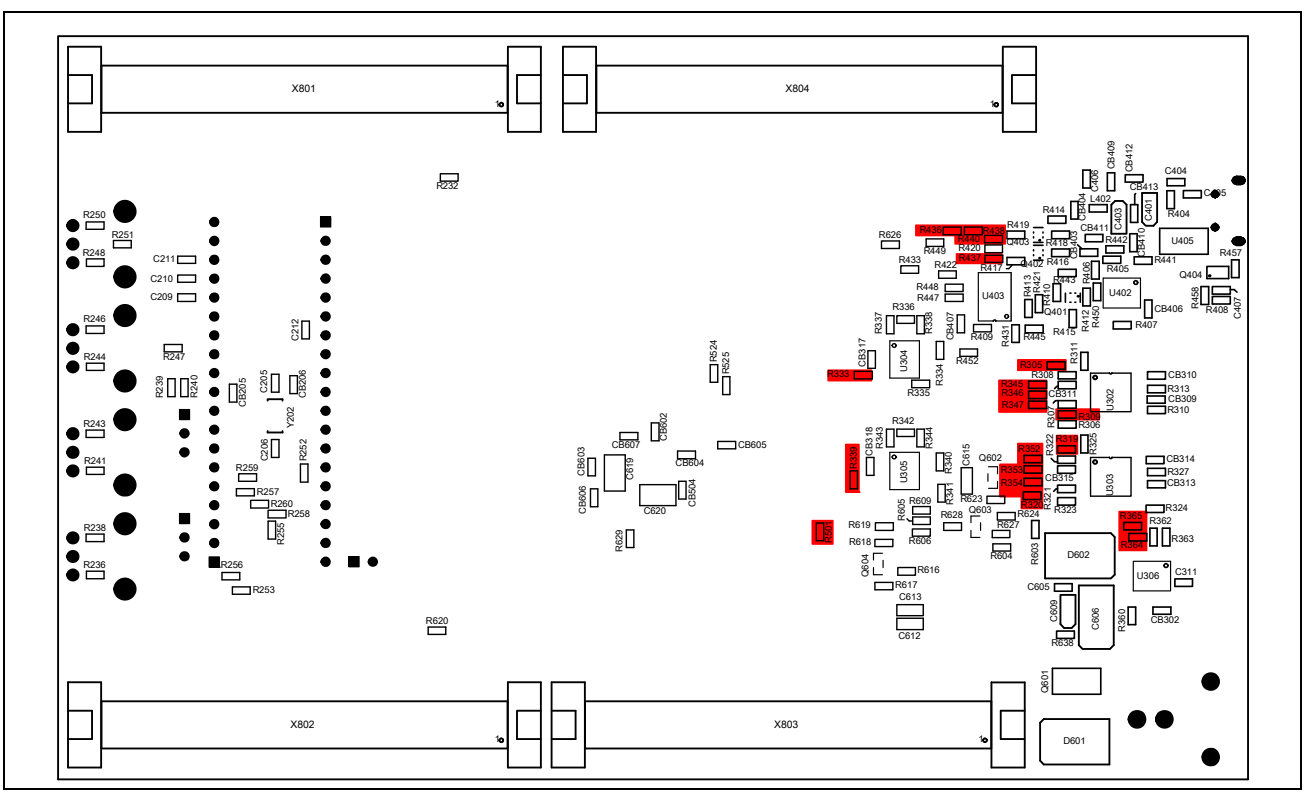

Figure 4-5 Location of peripheral resistors on Bottom Side

Table 4-4 Resistors for safety device

Component	Description
R251	Connect potentiometer to sensor input D (default: assembled)
R247	Connect potentiometer to sensor input C (default: assembled)
R239/R240	Voltage divider to adapt VDDP3 to VAREF of safety device (default: assembled)
R256	Connect P15.0 (ASCLIN1_SCLK) to SCLK of safety device (default: assembled)
R258	Connect P20.10 (ASCLIN1_TX) to MTSR of safety device (default: assembled)
R260	Connect P33.6 (ASCLIN1_RXF) to MRST of safety device (default: assembled)
R252	Connect P20.6 (ASCLIN1_SLSO / QSPI0_SLSO8) to /CS of safety device (default: not assembled)
R253	Connect P20.11 (QSPI0) to SCLK of safety device (default: not assembled)
R255	Connect P20.14 (QSPI0) to MTSR of safety device (default: not assembled)
R257	Connect P20.12 (QSPI0) to MRST of safety device (default: not assembled)

Note: All resistors are red marked in the following figures

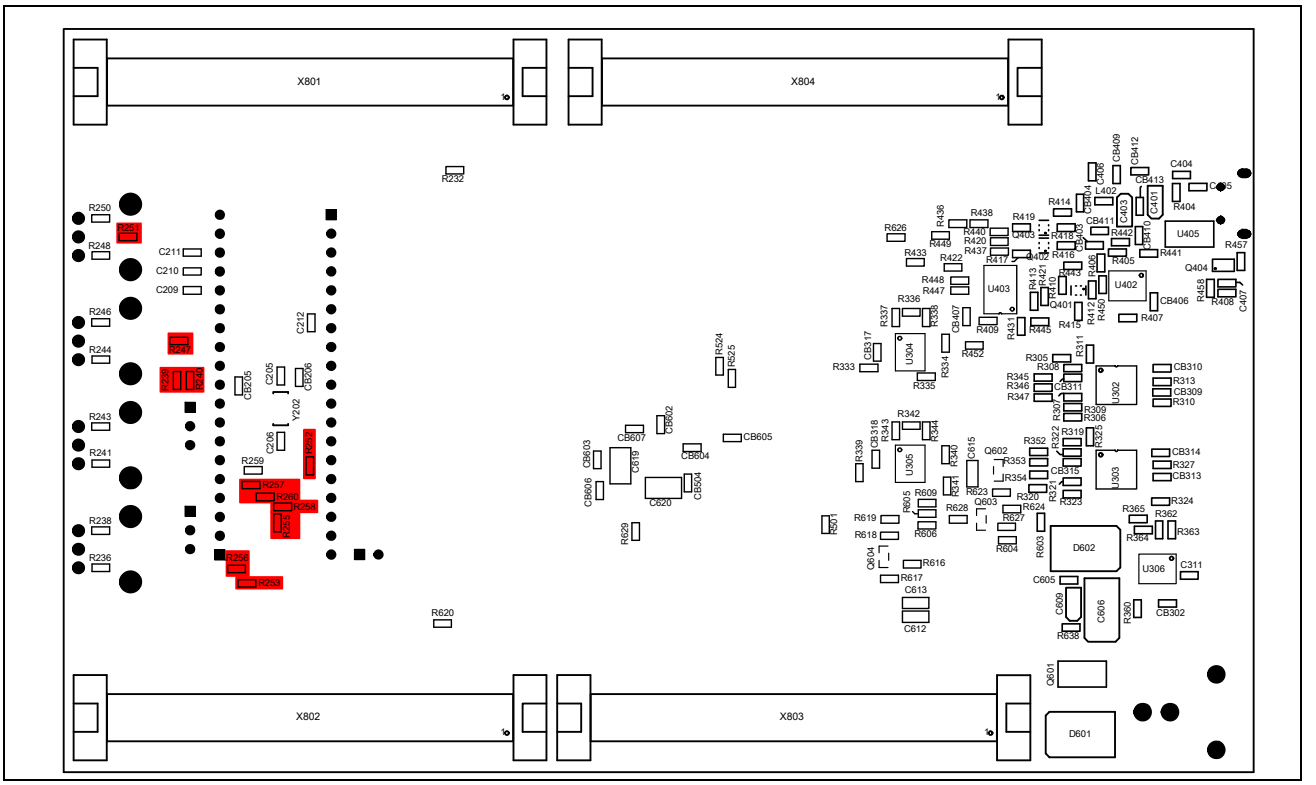

Figure 4-6 Location of resistors for safety device on Bottom Side

5 Connector Pin Assignment

The TriBoard will be shipped with four male (plug) connectors on top layer and four female (socket) connectors on bottom layer. The default connectors are 80-pol. Board to Board connectors from Samtec:

http://www.samtec.com

Plug:

FTSH-140-02-L-DV-ES-A

Socket:

FLE-140-01-G-DV-A

5.1 TC2X3 Connector / Top View

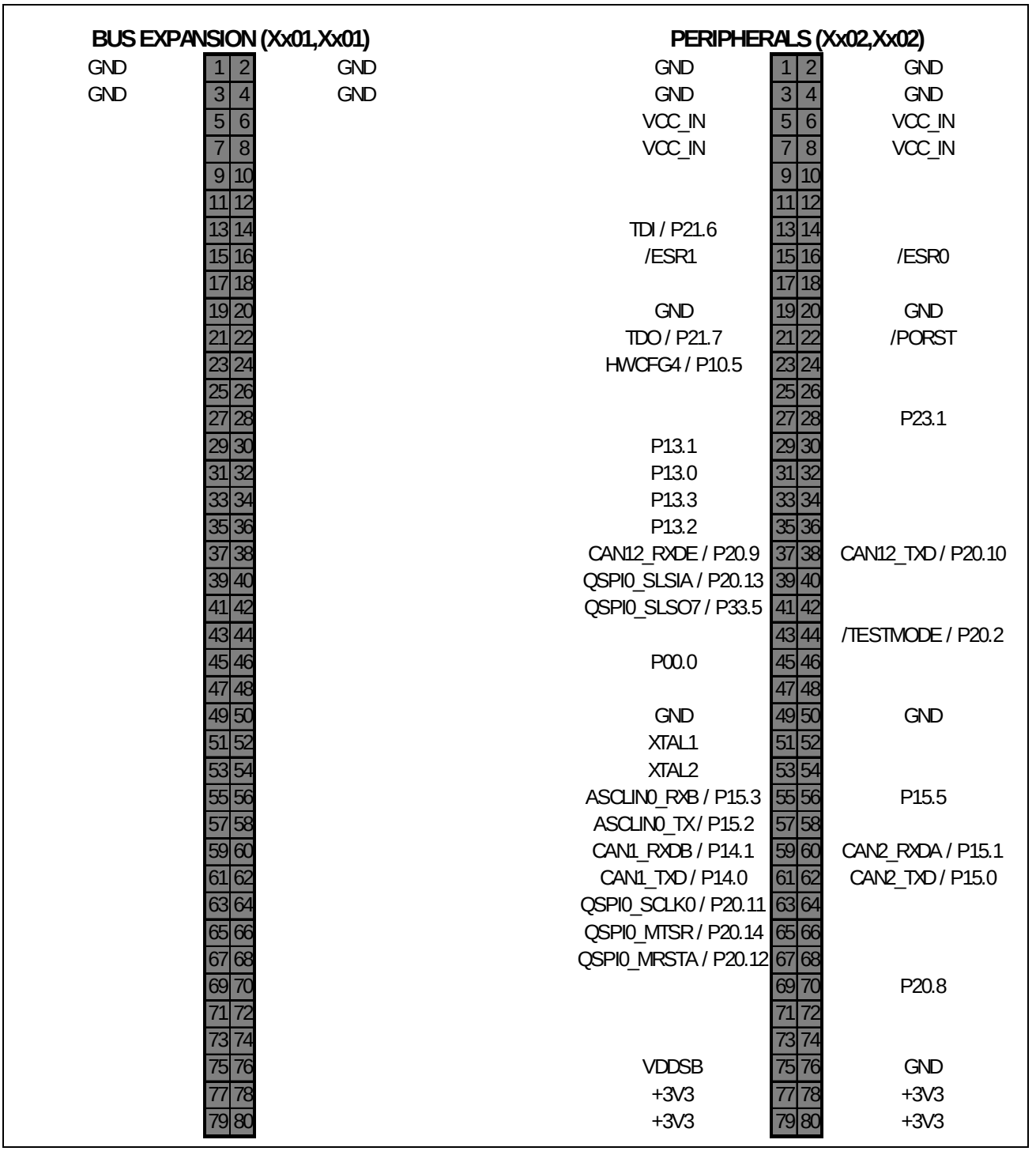

Figure 5-1 Connector for TC2X3 - Pinout (Part I, Top View)

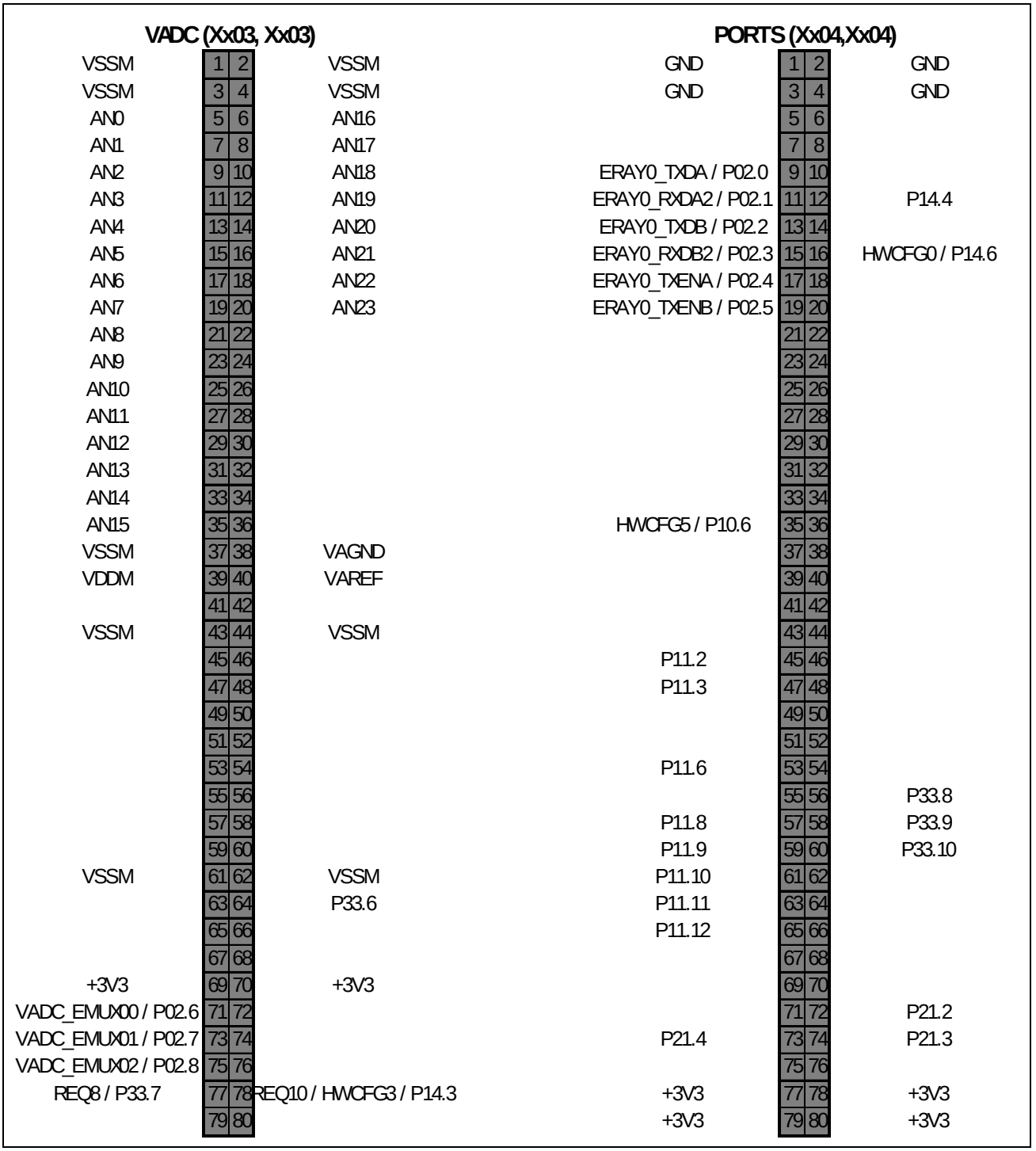

Figure 5-2 Connector for TC2X3 - Pinout (Part II, Top View)

5.2 Power connector pinout

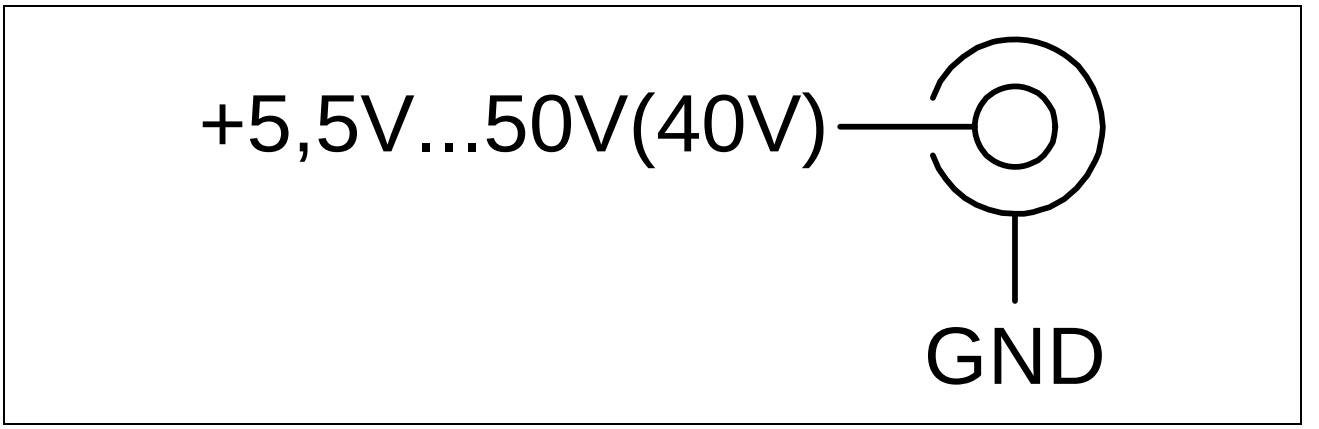

Figure 5-3 Power connector pinout

5.3 USB connector pinout

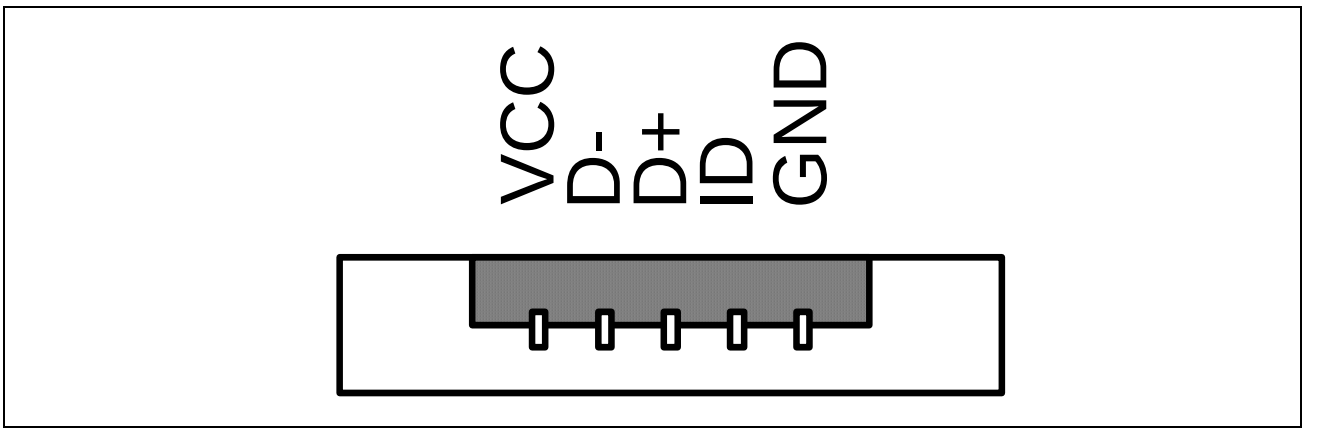

Figure 5-4 USB connector Pinout

5.4 Flexray Pinout

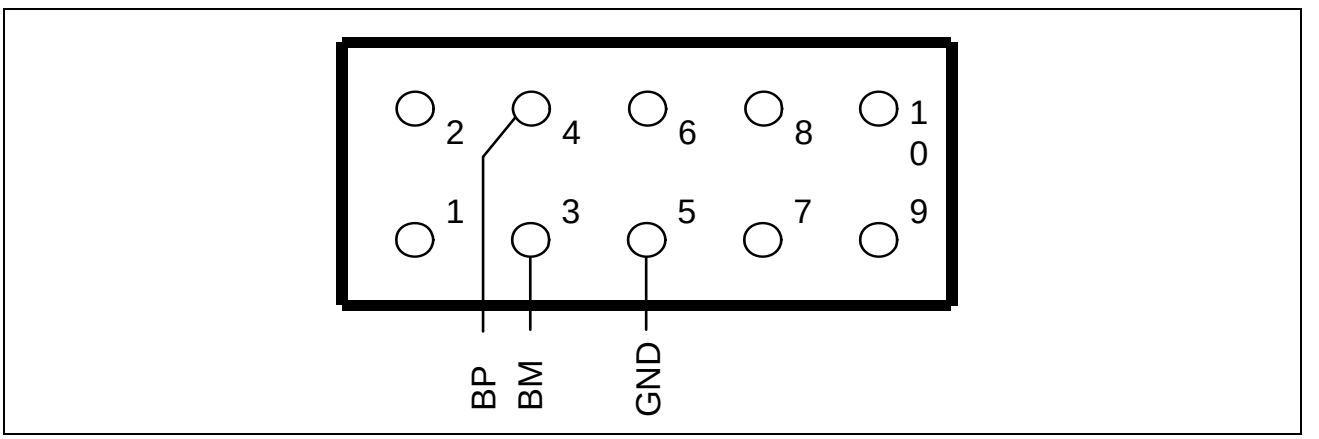

Figure 5-5 Flexray Pinout (IDC10

5.5 CAN connector pinout

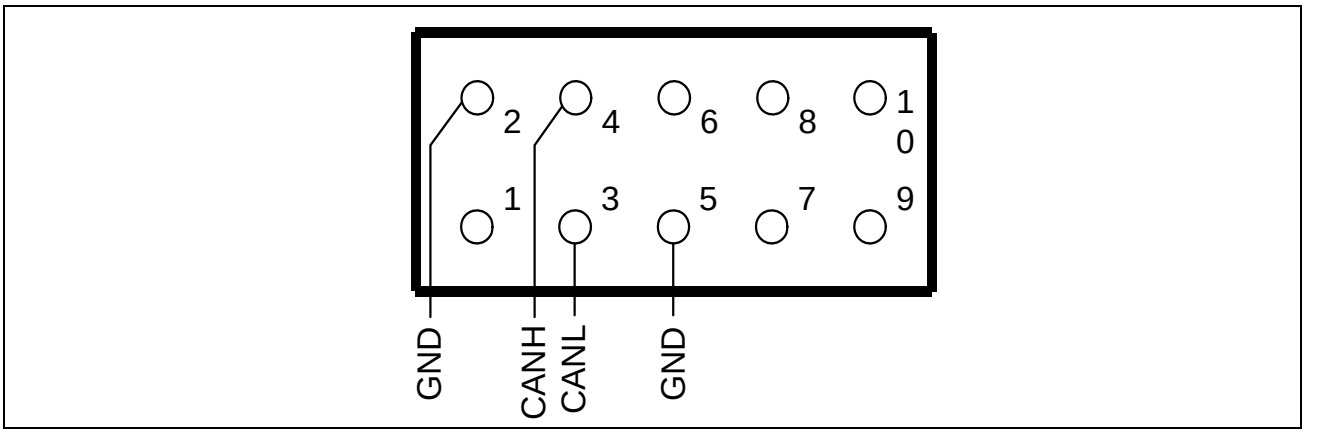

Figure 5-6 CAN connector pinout (IDC10)

5.6 LIN connector pinout

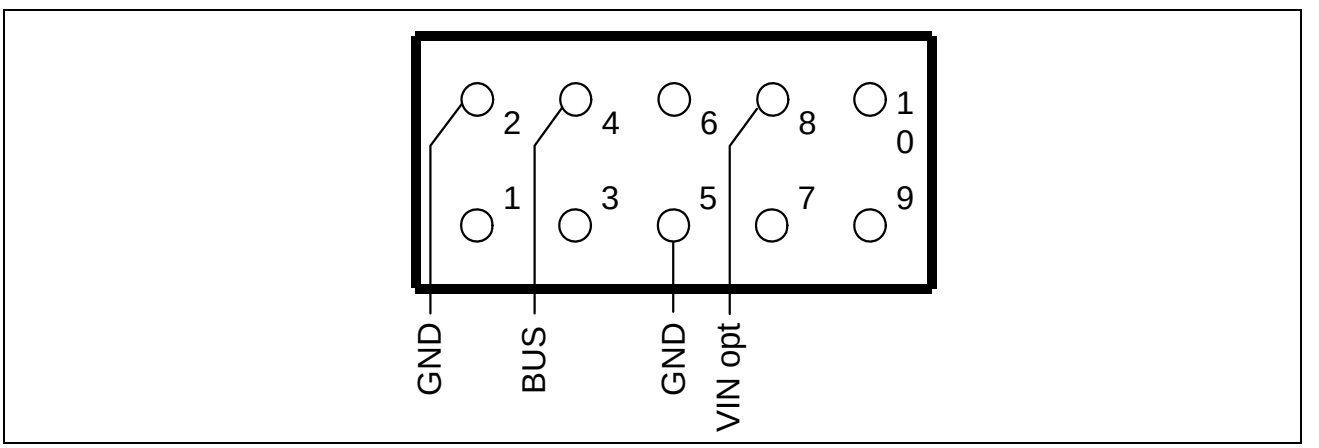

Figure 5-7 LIN connector pinout (IDC10)

5.7 OCDS connector pinout

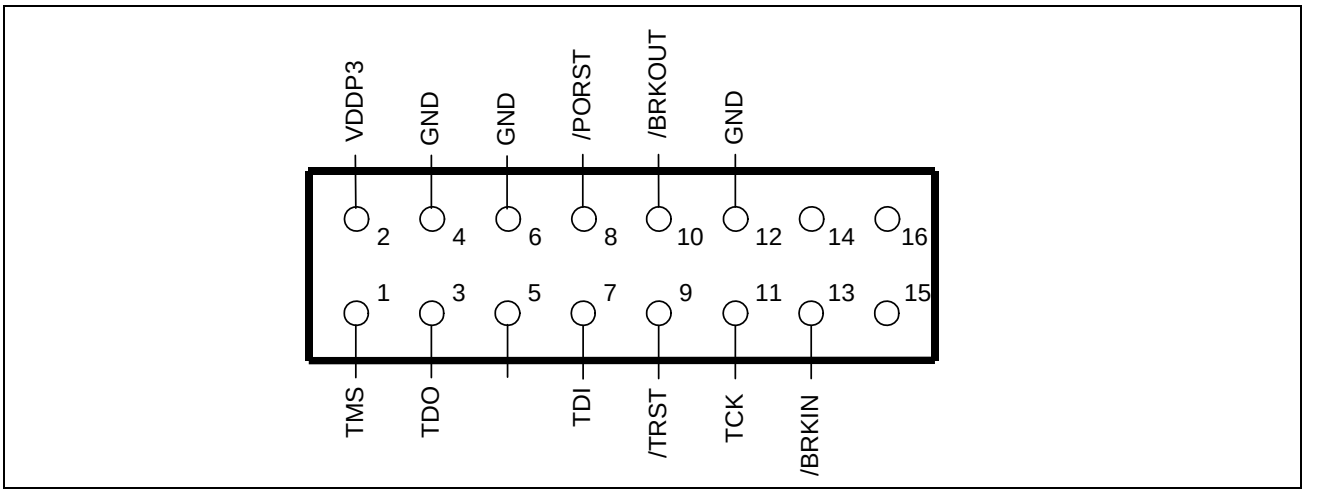

Figure 5-8 OCDS connector pinout (IDC16)

5.8 DAP connector pinout

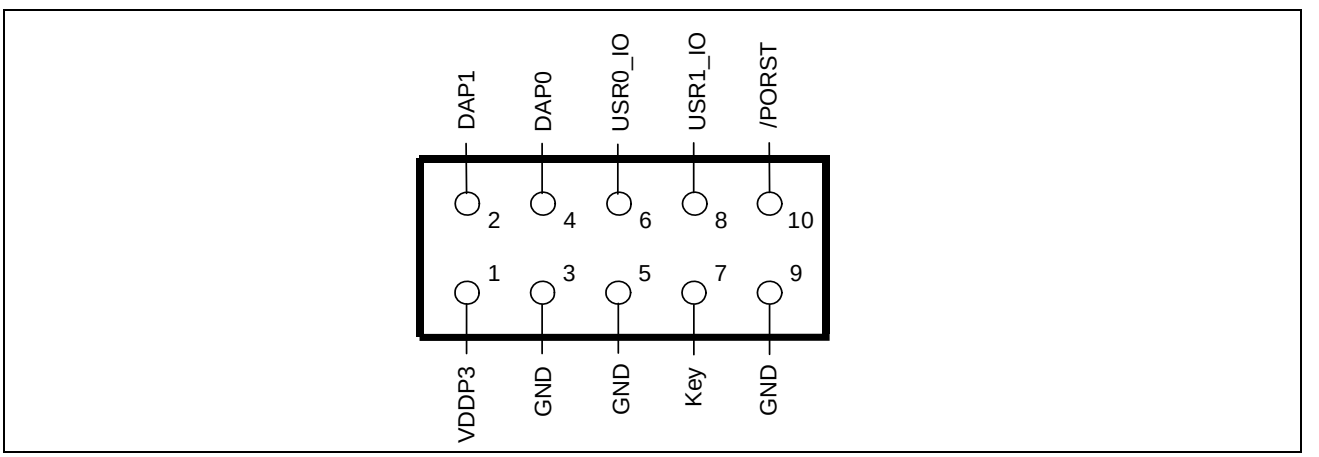

Figure 5-9 DAP connector pinout (FTSH10)

6 Signal Description

For more information about the signals please see the user manuals for TC2X3 and/or the schematics of the board.

Table 6-1 Power Signals

Short Name	Description
VCC_IN	Supply Input (5,5V...50V(40V))
VIN	Input voltage of power supply device
GND	Ground
VDD	Core Supply Voltage (1,3V)
VDDP3	External Supply Voltage (3,3V)
VSSM	ADC Analog Part Ground
VDDM	ADC Analog Part Supply Voltage (5V or 3,3V)
VAGND	ADC Reference Ground
VAREF	ADC Reference Voltage (VDDM)
VDD_FT	Supply Voltage FT2232HL device (3,3V)
VDDP_CIC	Port Supply Voltage safety device (3,3V)
VAGND_CIC	ADC Reference Ground safety device
VAREF_CIC	ADC Reference Voltage safety device (2,5V)

Table 6-2 Reset Signals

Short Name	Description
/PORST	Power On Reset
/ESR0	External Service Request 0 (Hardware Reset)
/ESR1	External Service Request 1 (Non Maskable Interrupt)
/RESET_CIC	Reset safety device

Table 6-3 Config Signals

Short Name	Description
HWCFG0 / P14.6	Select Switching DC/DC or internal EVR
HWCFG3 / P14.3	Select internal BMI or pins
HWCFG4 / P10.5	Select the bootmode
HWCFG5 / P10.6	Select the bootmode

Table 6-4 Clock Signals

Short Name	Description
XTAL1	Crystal Oscillator Input
XTAL2	Crystal Oscillator Output
XTAL1_CIC	Crystal Oscillator Input safety device
XTAL2_CIC	Crystal Oscillator Output safety device

Table 6-5 Debug Signals

Short Name	Description
/TRST	Test Reset
TCK / DAP0	Test Clock / Device Access Pin 0
TMS / DAP1	Test Mode Select / Device Access Pin 1
TDI / P21.6	Test Data Input
TDO / P21.7	Test Data Output
/TESTMODE / P20.2	Test Mode Select Input
TCLK_CIC	Test Clock safety device
TMS_CIC	Test Mode Select safety device
TDI_CIC	Test Data Input safety device
TDO_CIC	Test Data Outpu safety device
MBC_CIC	Monitor & Bootstrap loader Control line safety device

Table 6-6 Peripheral Signals

Short Name	Description
P15.3	Receive Data ASCLIN0
P15.2	Transmit Data ASCLIN0
P20.9	Receive Data ASCLIN1
P20.10	Transmit Data ASCLIN1
SCLK0 / P20.11	Clock Line QSPI0
MRST0A / P20.12	Master Receive / Slave Transmit QSPI0
MTSR0 / P20.14	Master Transmit / Slave Receive QSPI0
SLSI0A / P20.13	Slave Select Input QSPI0
SLSO07 / P33.5	Slave Select Output 7 (QSPI0)
P33.8	CAN node 0 Transmitter Output

Table 6-6 Peripheral Signals

P33.7	CAN node 0 Receiver Input
P14.0	CAN node 1 Transmitter Output
P14.1	CAN node 1 Receiver Input
P15.0	CAN node 2 Transmitter Output
P15.1	CAN node 2 Receiver Input
P20.10	CAN1 node 2 Transmitter Output
P20.9	CAN1 node 2 Receiver Input
P02.0	E-Ray Channel A transmit Data Output
P02.4	E-Ray Channel A transmit Data Output enable
P02.1	E-Ray Channel A Receive Data Input 0
P02.2	E-Ray Channel B transmit Data Output
P02.5	E-Ray Channel B transmit Data Output enable
P02.3	E-Ray Channel B Receive Data Input 0
AN[0...23]	Analog Inputs
P02.6...8	VADC External Multiplexer Control 0
P11.8...11 and P13.0...3	On board LED’s
P00.0	General Purpose Port 00[0]
P11.2...12	General Purpose Port 11[2...12]
P14.4	General Purpose Port 14[4]
P15.5	General Purpose Port 15[5]
P20.8	General Purpose Port 20[8]
P21.2...4	General Purpose Port 21[2...4]
P23.1	General Purpose Port 23[1]
P33.6	General Purpose Port P33[6]

Table 6-7 Safety device Signals

Short Name	Description
SENA	Sensor Input A
SENB	Sensor Input B
SENC	Sensor Input C
SEND	Sensor Input D
SCLK_CIC	Clock Line SAK-CIC61508

Table 6-7 Safety device Signals

MRST_CIC	Master Receive / Slave Transmit SAK-CIC61508
MTSR_CIC	Master Transmit / Slave Receive SAK-CIC61508
/CS_CIC	Slave Select Input SAK-CIC61508
SYSDISA	System Disable Output A
SYSDISB	System Disable Output B
SYSDISC	System Disable Output C

7 Schematic and Layout

7.1 Schematic

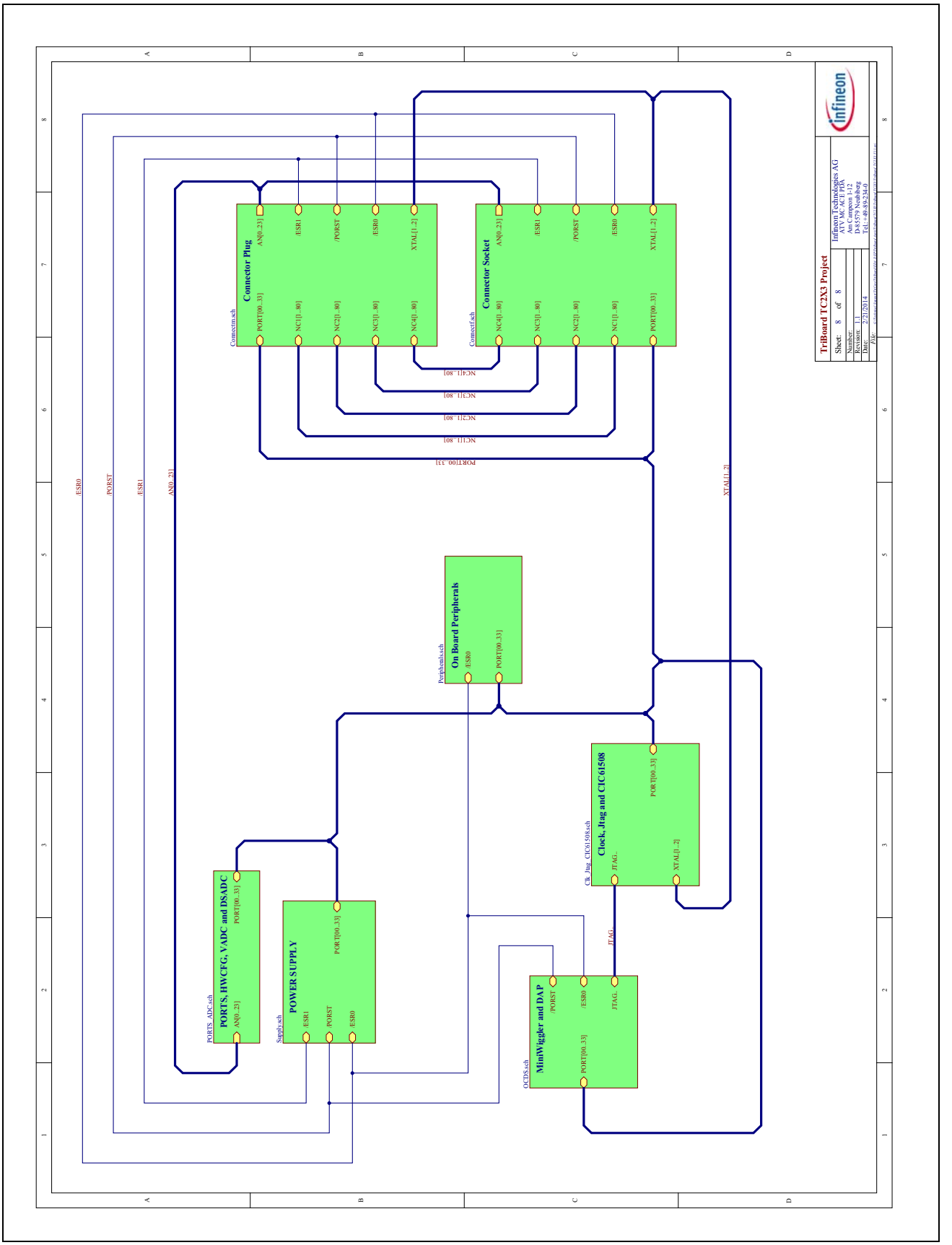

Figure 7-1 Schematic - Project

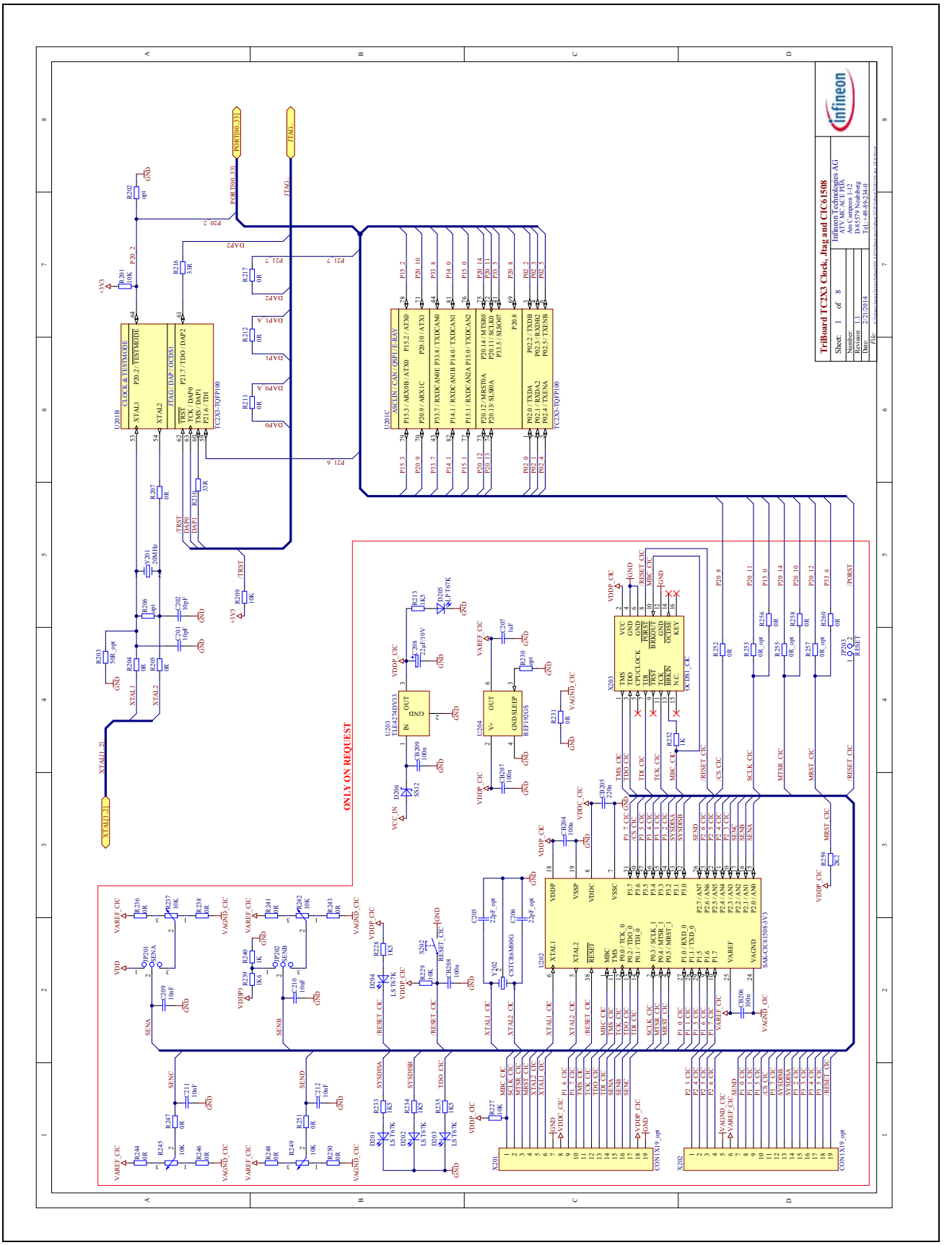

Figure 7-2 Schematic - Clock, JTAG and CIC61508

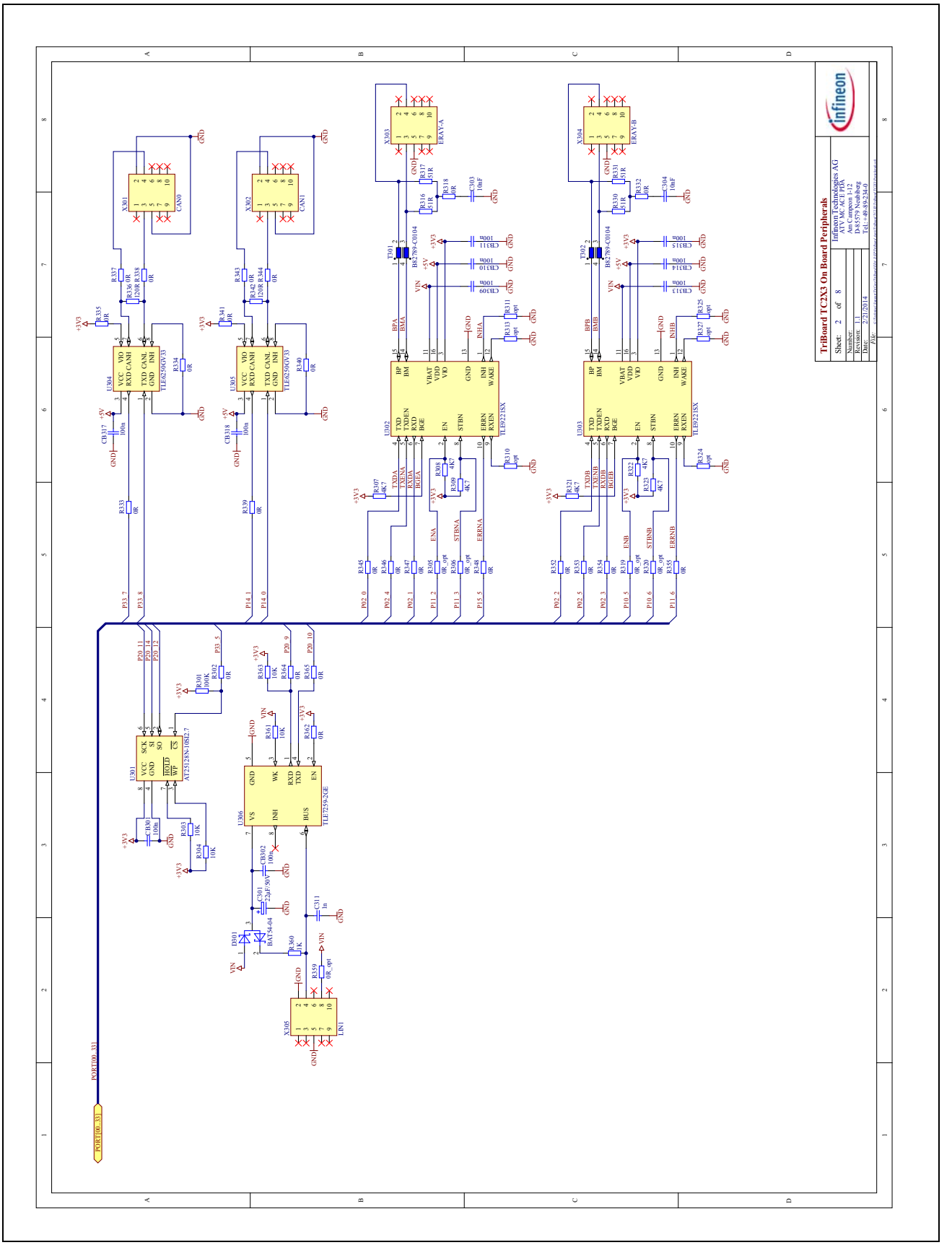

Figure 7-3 Schematic - Flexray, CAN and Eeprom

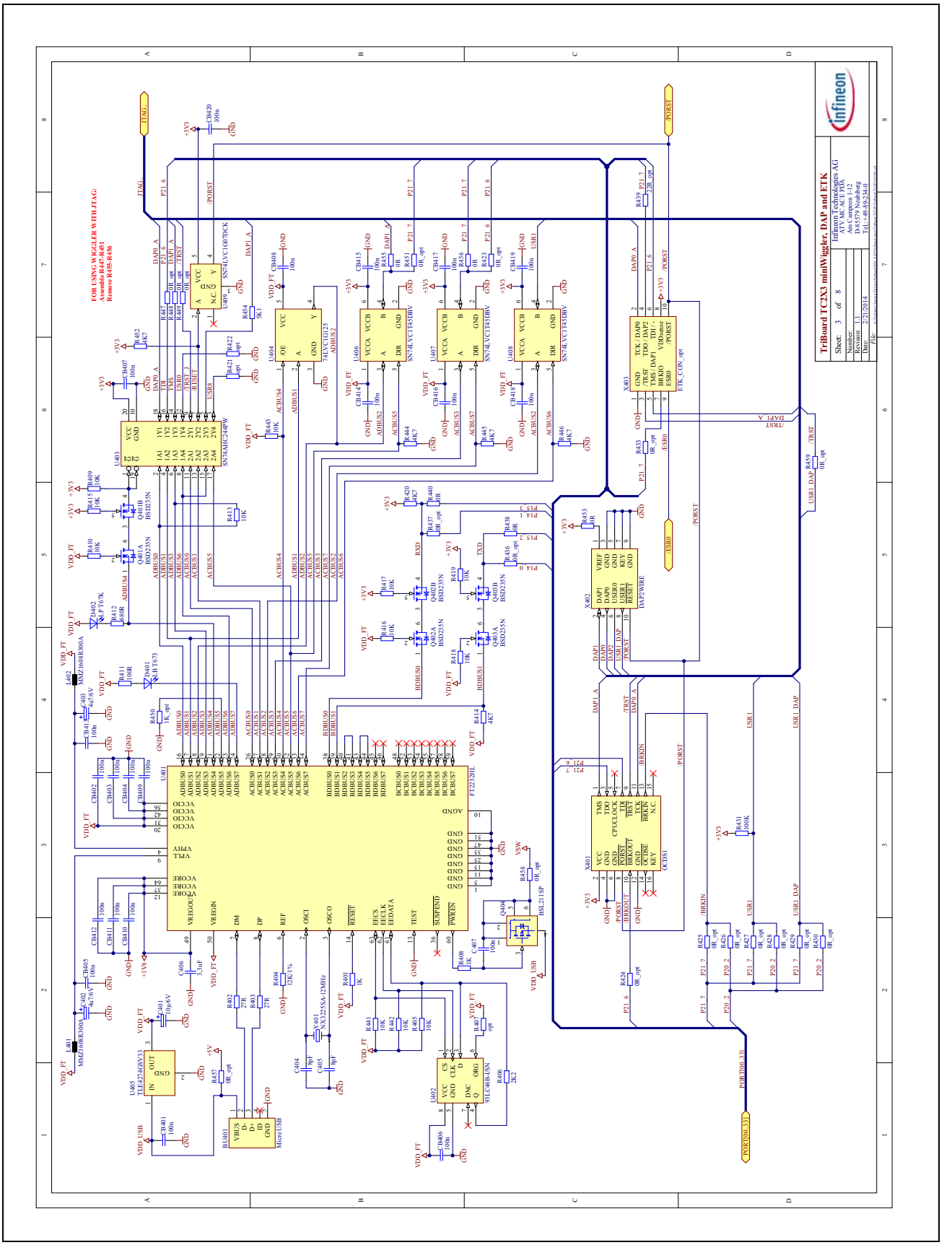

Figure 7-4 Schematic - miniWiggler JDS, DAP and ETK

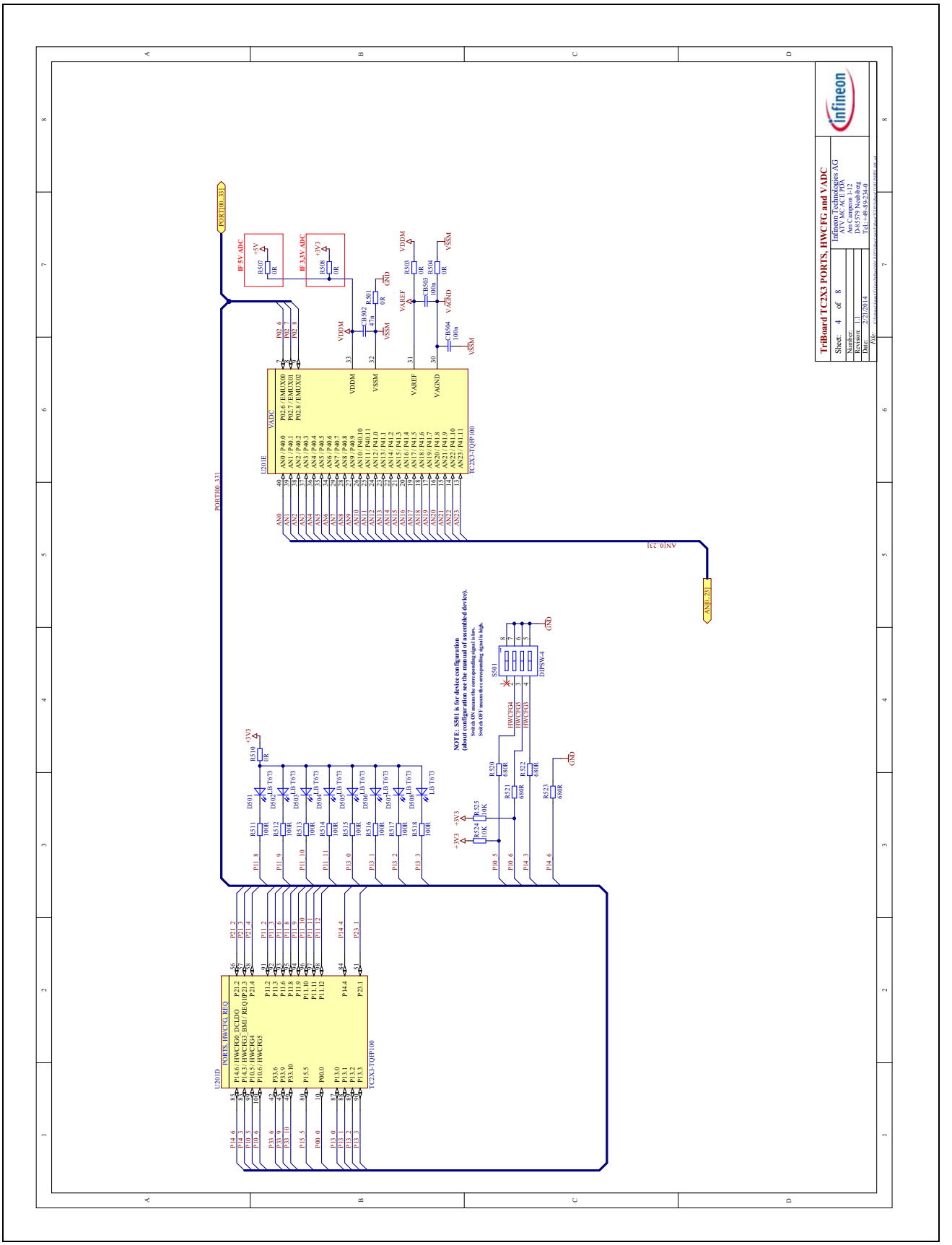

Figure 7-5 Schematic - Ports, Config, LEDs and ADC

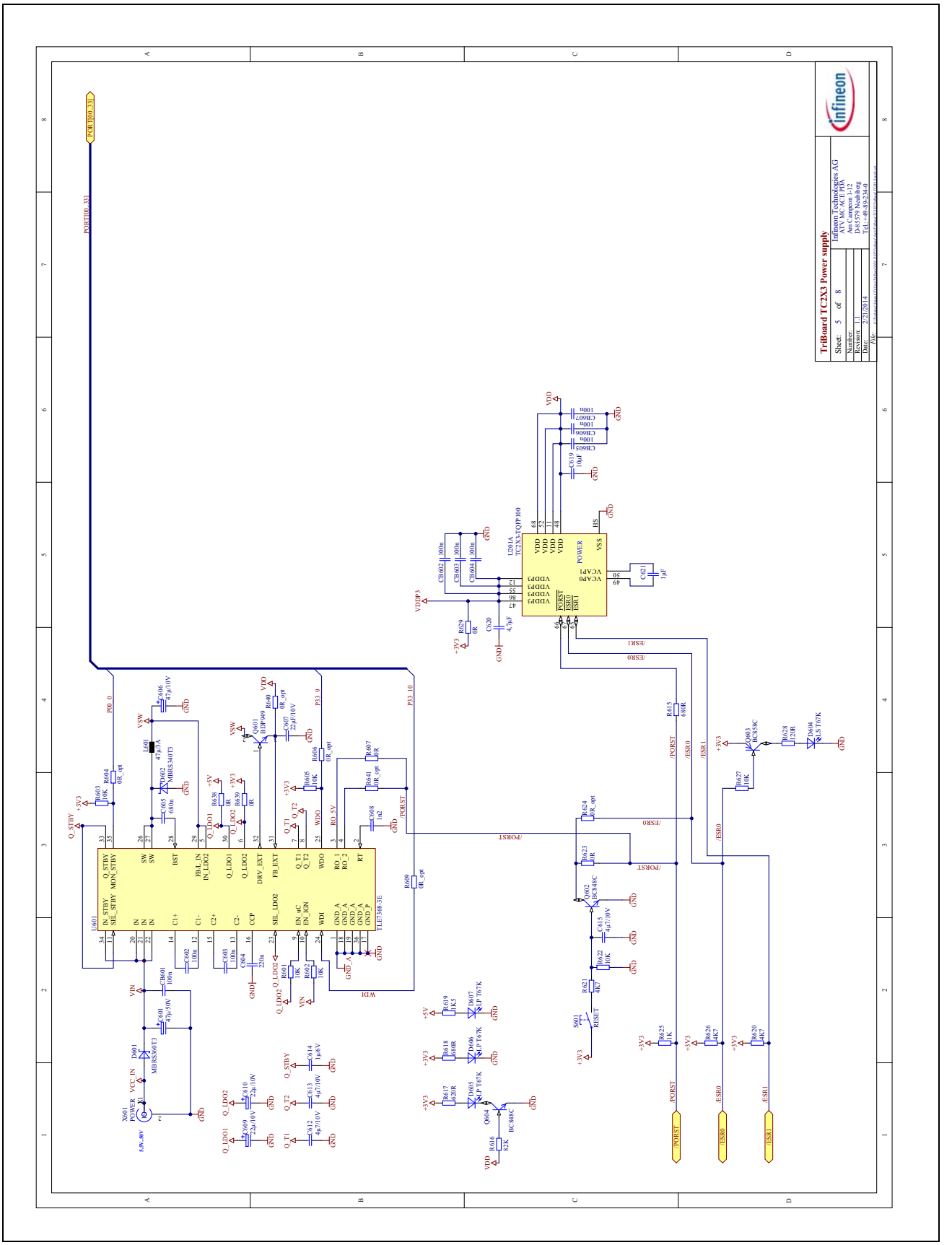

Figure 7-6 Schematic - Power Supply

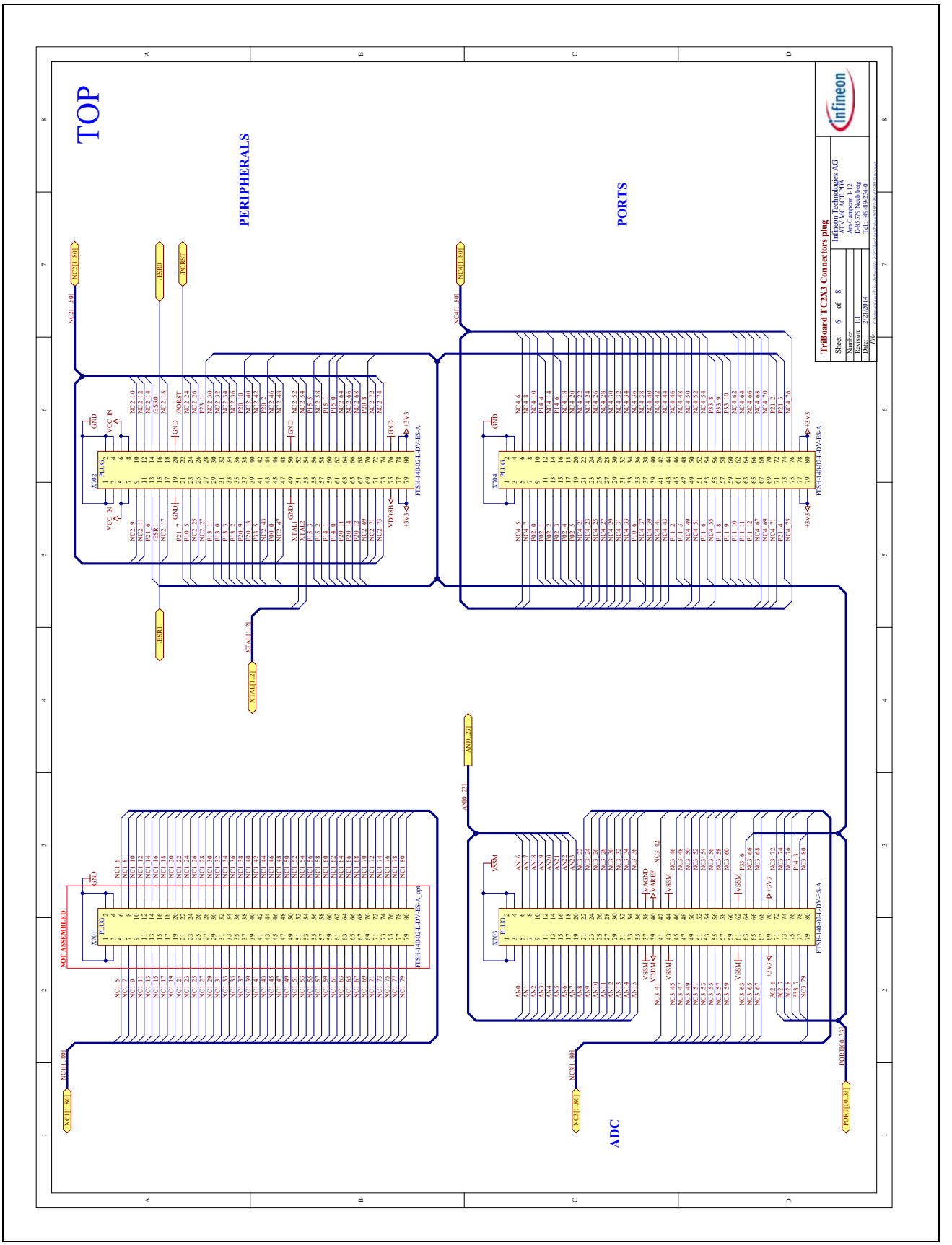

Figure 7-7 Schematic - Connectors (Plug)

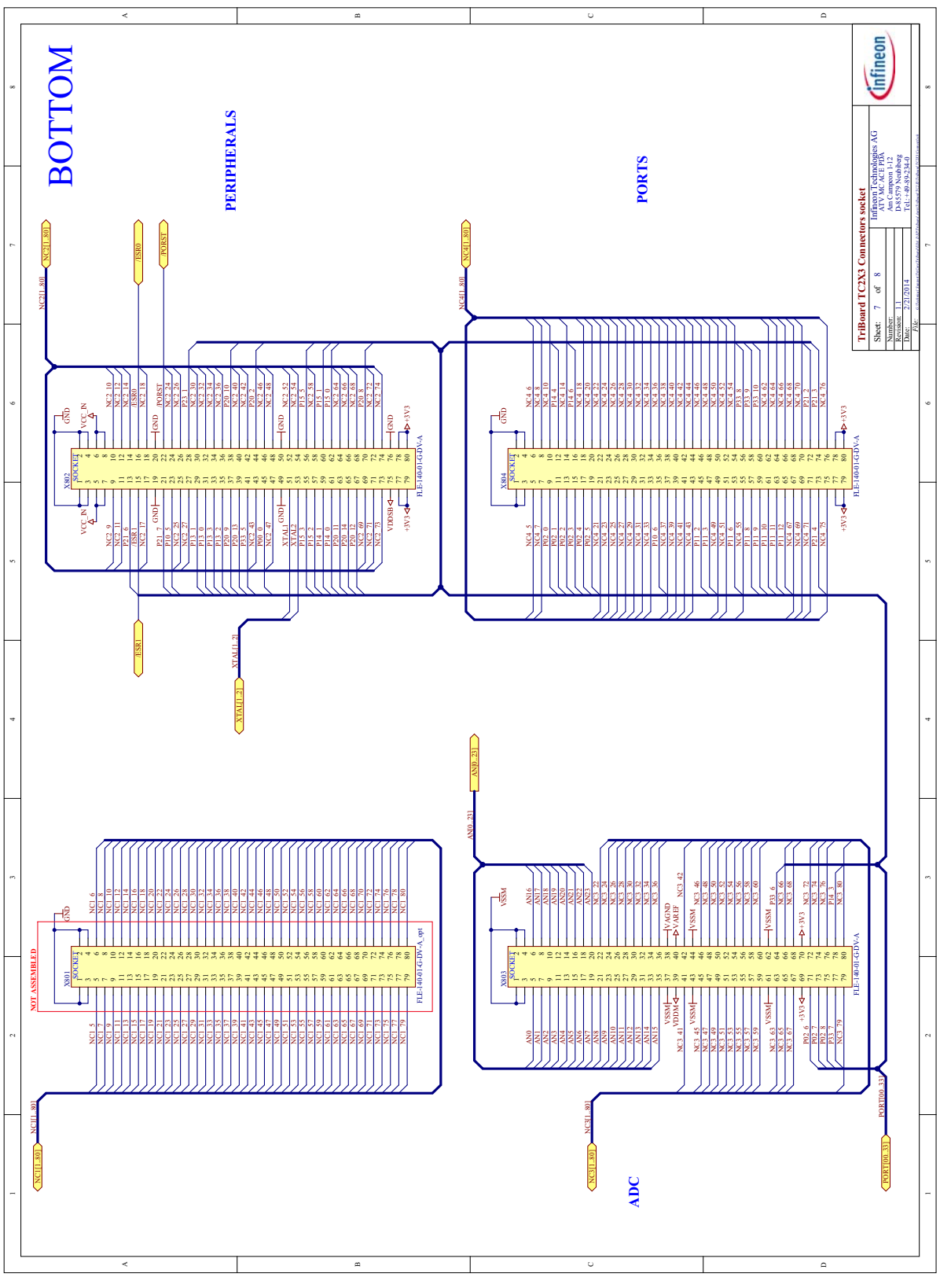

Figure 7-8 Schematic - Connectors (Socket)

7.2 Layout

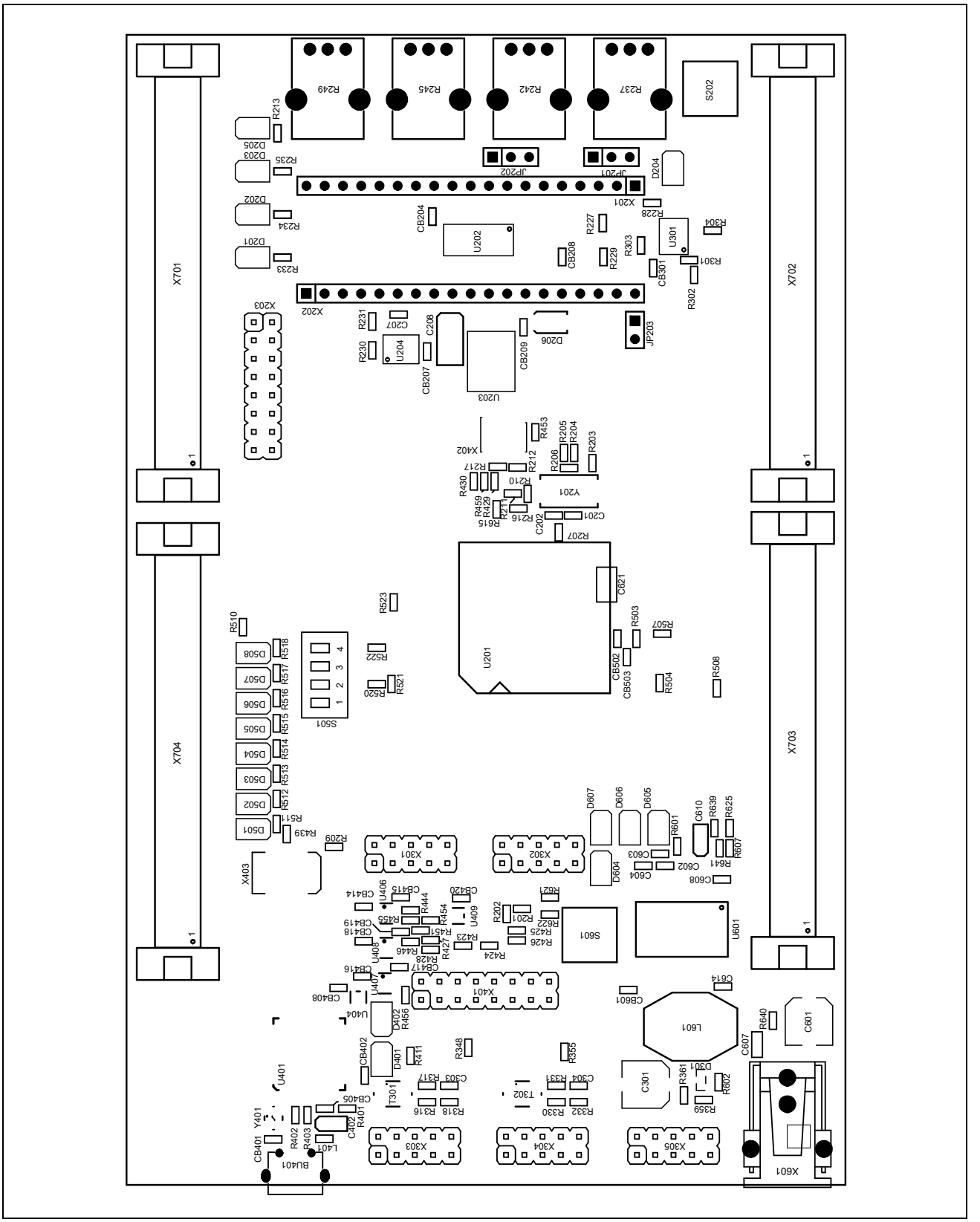

Figure 7-9 Component Plot Top Layer

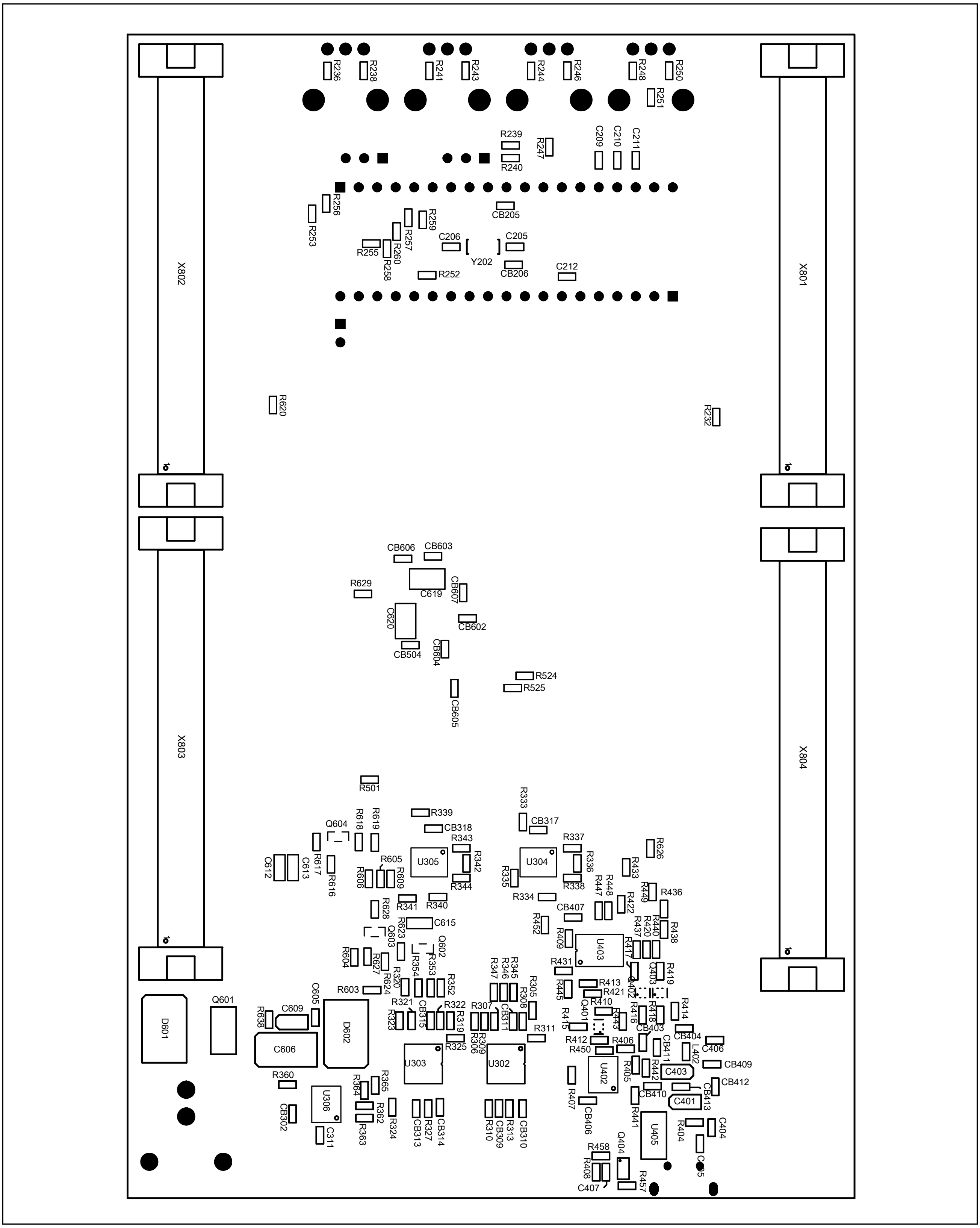

Figure 7-10 Component Plot Bottom Layer

7.3 Layout with Dimensioning

The following dimensions should be used for development of extension boards.

Note: these are the pictures from the TriBoard TC1798. Connectors X701/X801...X704/804 are on the same place.

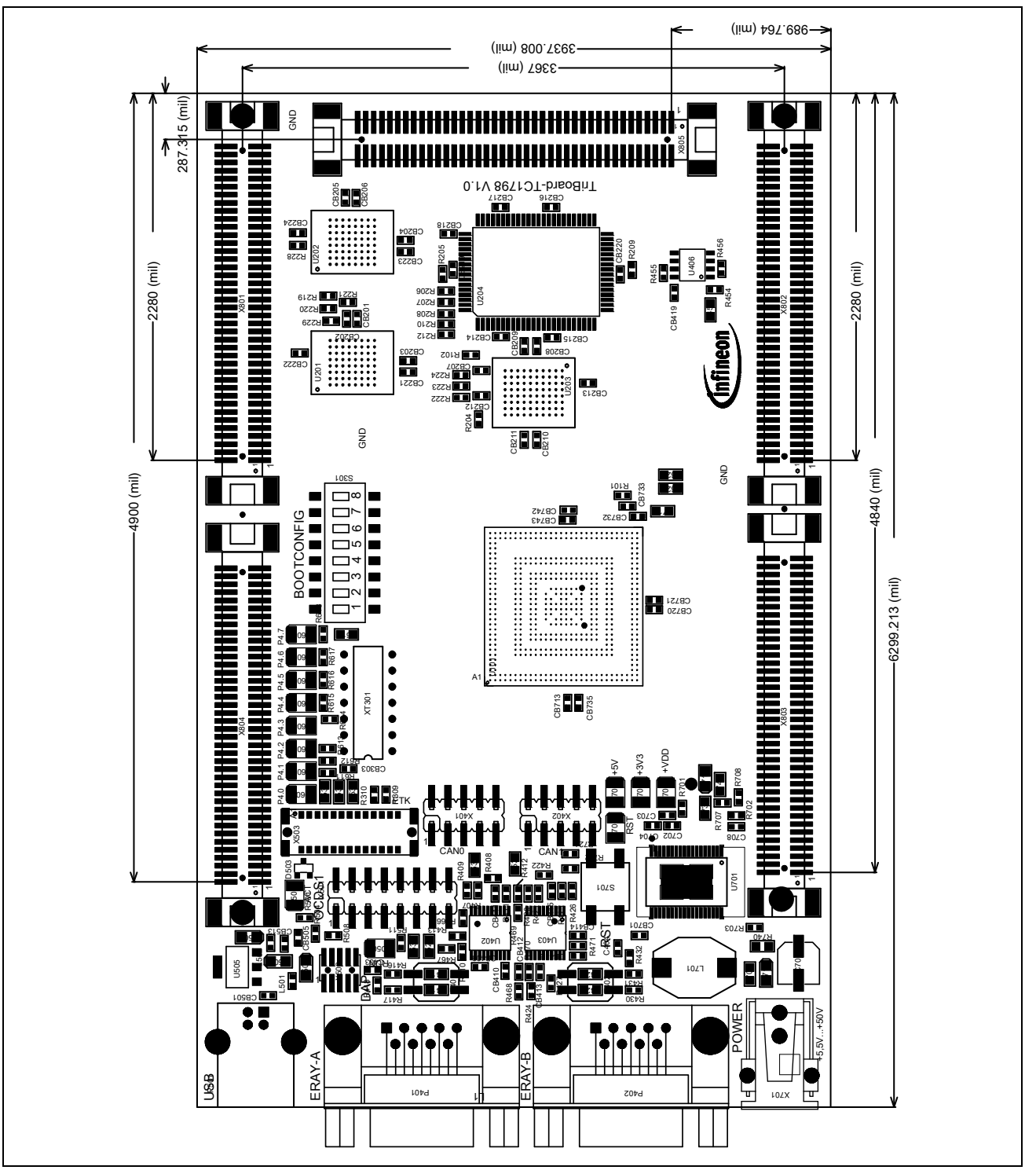

Figure 7-11 Dimensioning (mil)

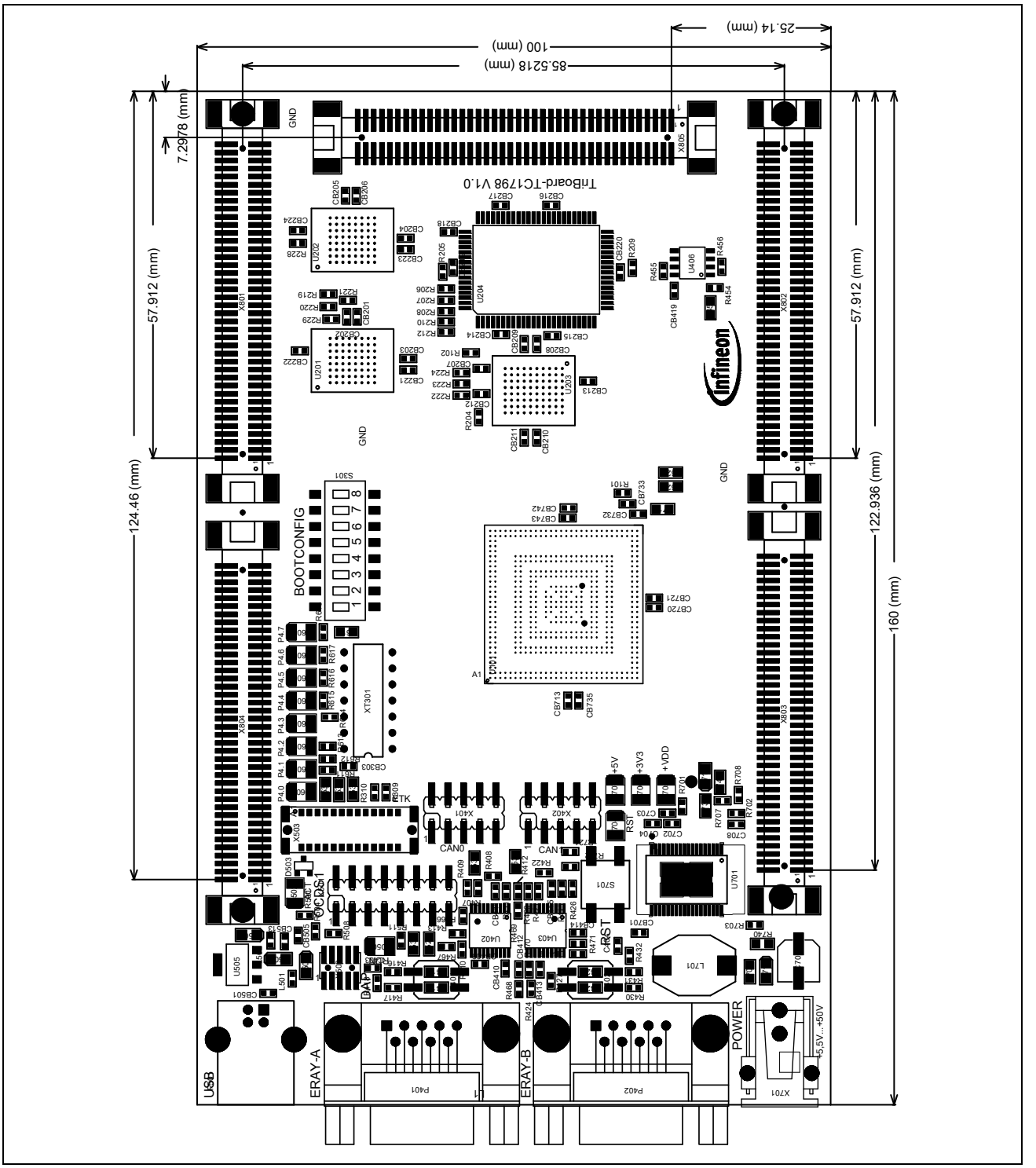

Figure 7-12 Dimensioning (mm)

Keyword Index

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