TE0706 TRM

Revision v.90

Exported on 2026-01-12

1 Table of Contents

1 Table of Contents 2
2 Table of Figures 3
3 Table of Tables 4
4 Overview 6
4.1 Key Features 6
4.2 Block Diagram 7
4.3 Main Components 8
4.4 Initial Delivery State 9
5 Signals, Interfaces and Pins 10
5.1 Connectors 10
5.2 Test Points 12
6 On-board Peripherals 13
7 Configuration and System Control Signals 16
8 Power and Power-On Sequence 18
8.1 Power Rails 18
8.2 Recommended Power up Sequencing 19
9 Board to Board Connectors 21
9.1 Connector Mating height 21
9.2 Connector Speed Ratings 22
9.3 Current Rating 22
9.4 Connector Mechanical Ratings 22
10 Technical Specifications 23
10.1 Absolute Maximum Ratings *) 23
10.2 Recommended Operating Conditions 23
10.2.1 Temperature range 24
10.2.2 Voltage rails 24
10.3 Physical Dimensions 24
11 Currently Offered Variants 26
12 Revision History 27
12.1 Hardware Revision History 27
12.2 Document Change History 30
13 Disclaimer 32
13.1 Data Privacy 32
13.2 Document Warranty 32
13.3 Limitation of Liability 32
13.4 Product Disclaimer 32
13.5 Copyright Notice 32
13.6 Technology Licenses 33
13.7 Environmental Protection 33
13.8 REACH, RoHS and WEEE 33

2 Table of Figures

Figure 1: TE0706 block diagram 7
Figure 2: TE0706 main components 8
Figure 3: Physical Dimension 25
Figure 4: Board hardware revision number. 27

3 Table of Tables

Table 1: Initial delivery state of programmable devices on the module 9
Table 2: Board Connectors 10
Table 3: Test Points Information 12
Table 4: On board peripherals 13
Table 5: Controller signal. 16
Table 6: Module power rails. 18
Table 7: Baseboard Design Hints 20
Table 8: Connectors. 21
Table 9: Speed rating. 22
Table 10: Absolute maximum ratings 23
Table 11: Recommended operating conditions. 24
Table 12: Trenz Electronic Shop Overview 26
Table 13: Hardware Revision History 28
Table 14: Document change history. 30

Current online version of this document.

4 Overview

The Trenz Electronic TE0706 Carrier Board provides functionalities for testing, evaluation and development purposes of Trenz's 4 x 5 cm SoMs. The Carrier Board is equipped with various components and connectors for different configuration setups and needs. The interfaces of the SoM's functional units and PL I/O-banks are connected via board-to-board connectors to the Carrier Board's components and connectors for easy user access.

Refer to 4 x 5 SoM Carriers page for more information about supported 4 x 5 cm SoMs.

Refer to http://trenz.org/te0706-info for current online available documentation.

4.1 Key Features

- **On Board**
  - Gigabit-Ethernet PHY
  - SDIO port level converter
  - 4x DIP switch to set SoM's control signals [1)]
  - User-push button connected to SoM [1)]
  - 3x header to set the SoM's I/O-bank voltages
  - 1x header to supply the SoM's real time clock
  - 1x header to select the SDIO voltage (3.3 V or 1.8 V)
- **Interface**
  - Trenz 4 x 5 SoM socket: 3 x Samtec LSHM series high-speed connectors
  - VG96 connector 96 pin (optional) [2)]
  - IDC connector 50 pin (optional)
  - USB Type A or Micro USB connector for SoM USB-OTG connection [3)]
  - XMOD header for an JTAG/UART to USB adapter [4)]
  - 2x RJ45 Gigabit-Ethernet MagJacks
  - Micro SD card socket with SDIO voltage converter (3.3 V or 1.8 V)
- **Power**
  - Overvoltage-, undervoltage- and reversed- supply-voltage-protection
  - Barrel jack (Ø 2.1 mm) for 5V power supply input
- **Dimension**
  - 100 mm × 64.5 mm
- **Notes**

  [1)] SoM firmware dependent. For more information refer to SoM firmware description, SoM TRM, 4 x 5 SoM Integration Guide and 4 x 5 series pinout tracelength.

  [2)] Needs to be ordered seperately. Refer to PCN-20231106 TE0706-03 BOM Change for more information.

  [3)] Depends on assembly variant.

  [4)] Refer to TE0790 TRM for more information.

4.2 Block Diagram

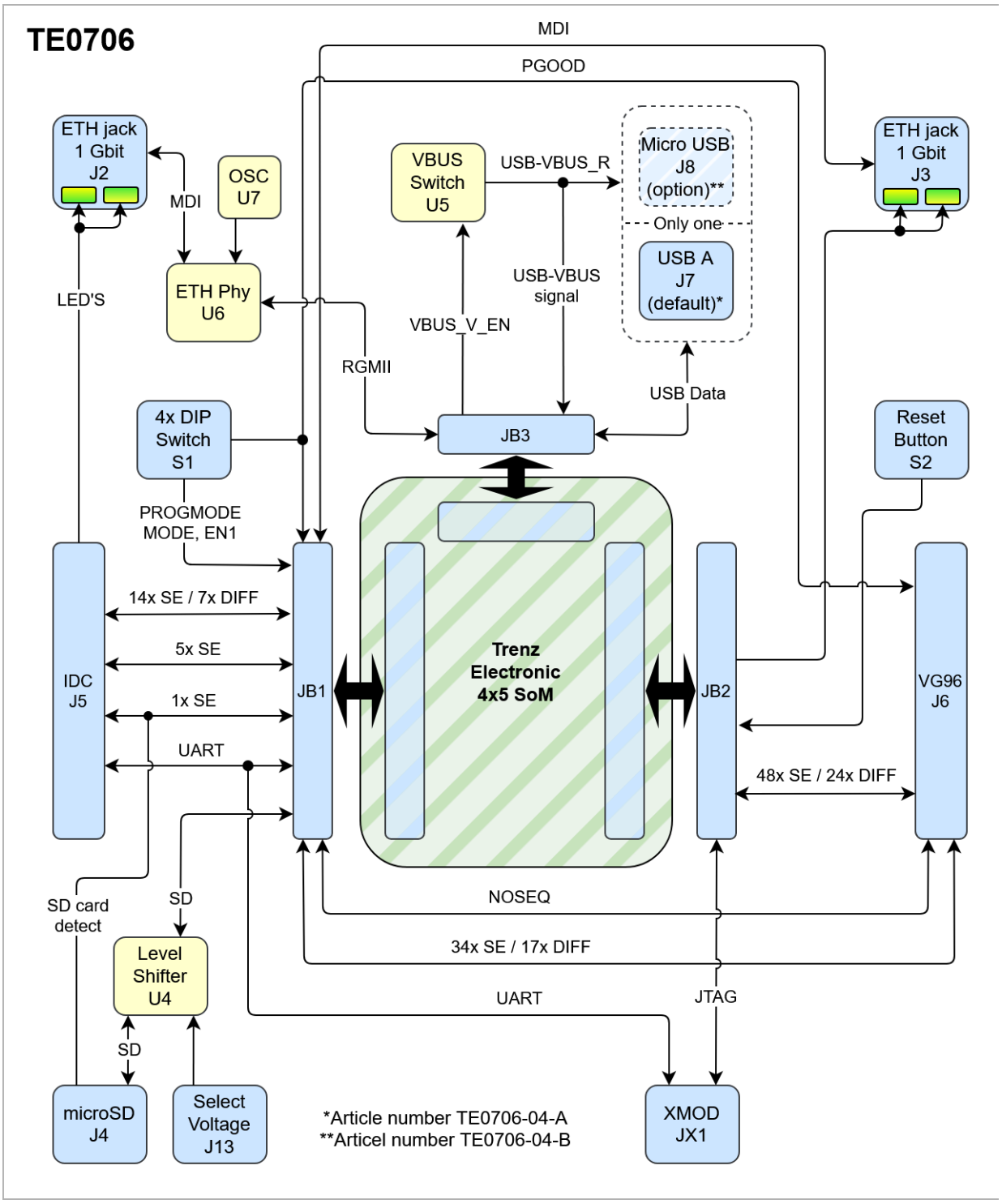

Figure 1: TE0706 block diagram

4.3 Main Components

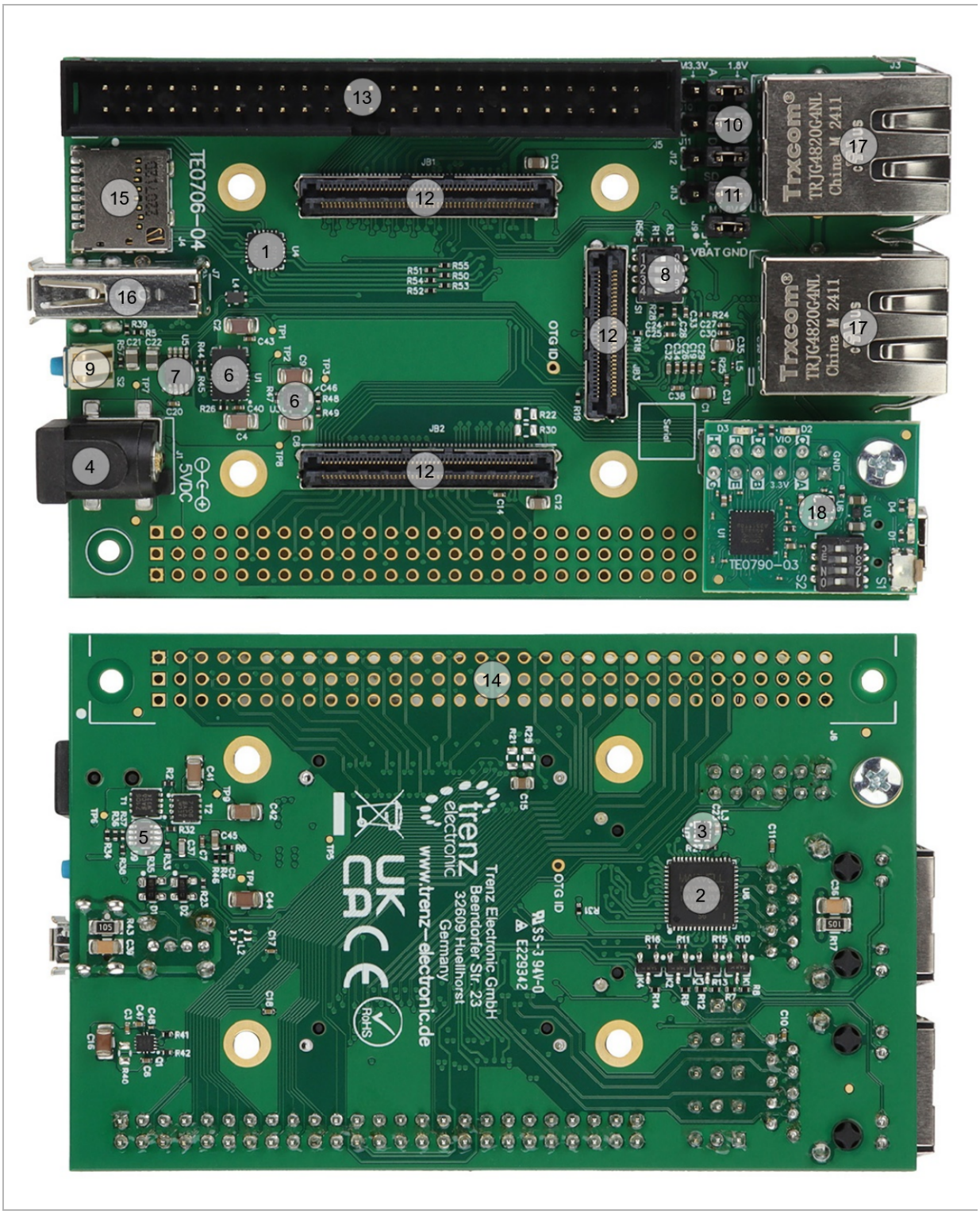

Figure 2: TE0706 main components

1. SDIO level shifter, U4
2. Gbit Ethernet PHY, U6
3. Oscillator 25 MHz, U7
4. +5V DC power barrel Jack, J1

5. DC power supply protection controller, U9
6. DCDC, U1, U3
7. USB VBus switch, U5
8. 4x DIP switch, S1
9. Reset switch, S2
10. Bank IO voltages selection jumpers, J10, J11, J12
11. MicroSD Card IO voltage selection jumper, J13
12. B2B Samtec Razor Beam LSHM connectors, JB1, JB2, JB3
13. IDC connector 50 pin assembly option, J5
14. VG96 connector 96 pin assembly option, J6
15. Micro SD card socket with card detect, J4
16. USB connector, USB Type A, J7 or Micro USB Type B, J8
17. RJ45 Ethernet jack, J2, J3
18. XMOD USB-to-JTAG/UART adapter, JX1

4.4 Initial Delivery State

Storage device name	Content	Notes
-	-	

Table 1: Initial delivery state of programmable devices on the module

5 Signals, Interfaces and Pins

5.1 Connectors

Connector Type	Designator	Interface	IO CNT	Notes
B2B	JB1	IO	14 SE / 7 DIFF	Connected to J5.
B2B	JB1	IO	34 SE / 17 DIFF	Connected to J6.
B2B	JB1	ETH / MDI	8	
B2B	JB1	SDIO	6	
microSD Card socket	J4	SDIO	6	
microSD Card socket	J4	SD card detect	1	MIO0
B2B	JB1	SD card detect	1	MIO0
IDC	J5	SD card detect	1	MIO0
B2B	JB1	IO	5	MIO9 ... MIO13
IDC	J5	IO	18 SE / 9 DIFF	
IDC	J5	IO	14 SE / 7 DIFF	
IDC	J5	IO	5	MIO9 ... MIO13
IDC	J5	ETH / LED	4	
RJ45 Ethernet	J2	ETH / MDI	8	

Connector Type	Designator	Interface	IO CNT	Notes
RJ45 Ethernet	J3	ETH / MDI	8	
B2B	JB3	ETH / RGMII	19	
B2B	JB3	USB	3	Data, ID
B2B	JB2	ETH / LED	4	
B2B	JB2	Reset	1	
B2B	JB2	IO	18 SE / 9 DIFF	
B2B	JB2	IO	48 SE / 24 DIFF	
VG96	J6	IO	48 SE / 24 DIFF	
VG96	J6	IO	34 SE / 17 DIFF	
B2B	JB1	UART	2	MIO14 / MIO15
IDC	J5	UART	2	MIO14 / MIO15
XMOD	JX1	UART	2	MIO14 / MIO15
B2B	JB2	JTAG	4	TCK_B / TDO_B / TDI_B / TMS_B
XMOD	JX1	JTAG	4	TCK_B / TDO_B / TDI_B / TMS_B

Table 2: Board Connectors

5.2 Test Points

Test Point	Signal	Notes
TP1	3.3V	
TP2	PG_1.8V	
TP3	1.8V	
TP4	3.3V	
TP5	1.8V	
TP6	5VIN	
TP7	5VIN	
TP8	VIN	
TP9	VIN	

Table 3: Test Points Information

6 On-board Peripherals

Chip/Interface	Designator	Connected To	Notes
TE0790	JX1	• B2B connector JB1 • B2B connector JB2	See TE0790 TRM for further information.
ETH PHY	U6	• B2B connector JB3 • Ethernet jack J2	
Oscillator	U7	• ETH PHY U6	25 MHz
USB Vbus switch	U5	• B2B connector JB3	
SD-IO level shifter	U4	• B2B connector JB1 • microSD card socket J4 • SD-IO voltage jumper J13	

<table>
<tr><th>Chip/Interface</th><th>Designator</th><th>Connected To</th><th>Notes</th></tr>
<tr><td>Dip switches</td><td>S1</td><td>PGOOD (S1A; dip 1)
PROGMODE (S1B; dip 2)
MODE (S1C, dip 3)
EN1 (S1D; dip 4)</td><td>Signals are 'low' (GND) when dip is closed (ON).
Default DIP Settings [1]:
<table>
<tr><th>DIP</th><th>Position</th><th>Description</th></tr>
<tr><td>S1-1</td><td>OFF</td><td rowspan="2">Boot Mode QSPI</td></tr>
<tr><td>S1-3</td><td>OFF</td></tr>
<tr><td>S1-2</td><td>ON</td><td>FPGA in JTAG chain</td></tr>
<tr><td>S1-4</td><td>OFF</td><td>Modul power enabled</td></tr>
</table></td></tr>
<tr><td>Push button</td><td>S2</td><td>RESIN</td><td>Active low.</td></tr>
<tr><td>Bank voltage selection Jumpers</td><td>J10
J11
J12</td><td>VCCIOA
VCCIOC
VCCIOD</td><td>Jumper on pins: [2]
1-2 selects 1.8V
2-3 selects 3.3V (M3.3VOUT)</td></tr>
<tr><td>SD IO voltage selection Jumper</td><td>J13</td><td>SD_VCCA</td><td>Jumper on pins: [2]
1-2 selects 1.8V (M1.8VOUT)
2-3 selects 3.3V (M3.3VOUT)</td></tr>
</table>

Table 4: On board peripherals

[1] Function SoM dependent. Refer to 4 x 5 SoM Integration Guide and SoM documentation for further information
[2] Refer to 4 x 5 SoM Integration Guide and SoM documentation for allowed settings.

7 Configuration and System Control Signals

Signal Name	Connector.Pin	Direction[1)]	Description
MIO0	JB1.88	OUT	SD card detect
VBUS_V_EN	JB3.54	IN	USB voltage enable
USB-VBUS	JB3.56	OUT	USB voltage present signal
RESIN	S2 / JB2.17	OUT	Reset signal [2)]
PGOOD	S2.1 / JB1.29 / J6.A30	OUT	Power Good signal [2)]
PROGMODE	S2.2 / JB1.90	OUT	JTAG Chain multiplexer [2)]
MODE	S2.3 / JB1.31	OUT	Boot Mode selection [2)]
EN1	S2.4 / JB1.27	OUT	Module power [2)]
NOSEQ	JB1.8 / J6.A31	INOUT	Module Power management [2)]
SD_VCCA	J13.2	IN	SD IO voltage select jumper [3)]
MIO14 / MIO15	JB1.91 / JB1.86 J5.32 / J5.31 JX1.7 / JX1.3	Signal dependent	UART
TCK_B / TDO_B / TDI_B / TMS_B	JB2.94 / JB2.96 / JB2.98 / JB2.100 JX1.4 / JX1.8 / JX1.10 / JX1.12	Signal dependent	JTAG

Table 5: Controller signal.

[1)] Direction:

- IN: Input from the point of view of this board.
- OUT: Output from the point of view of this board.

[2] SoM dependent. Refer to 4 x 5 SoM Integration Guide and SoM documentation for further information.

[3] Select 1.8 V or 3.3 V via jumper. Refer to 4 x 5 SoM Integration Guide for further information.

8 Power and Power-On Sequence

8.1 Power Rails

Power Rail Name/ Schematic Name	Connector.Pin	Direction[1)]	Notes
5VIN	J1.1	IN	Main Board power supply.
5VIN	J6.A1 / J6.A2	OUT	
USB-VBUS_R	J7.1 / J8.1	OUT	
USB-VBUS	JB3.56	OUT	
3.3V	JB1.2 / JB1.4 / JB1.6 / JB1.14 / JB1.16 JB2.1 / JB2.3 / JB2.5 / JB2.7 J5.6 / J5.45 / J6.C31 / JX1.5	OUT	Main SoM power supply.
3.3V_SD	J4.4	OUT	
1.8V	JB2.2 / JB2.4 J10.1 / J11.1 /12.1	OUT	
M3.3VOUT	JB2.9 / JB2.11	IN	Supplied by SoM.
M3.3VOUT	J5.5 / J5.46 / J6.C32 J10.3 / J11.3 /12.3 / J13.3	OUT	
M1.8VOUT	JB1.40	IN	Supplied by SoM.
M1.8VOUT	J13.1	OUT	

Power Rail Name/ Schematic Name	Connector.Pin	Direction[1)]	Notes
VBAT	J9.1	IN	
VBAT	JB1.80	OUT	
VCCIOA	J10.2	IN	SoM IO Bank supply. [2)]
VCCIOA	JB1.10 / JB1.12 / J6.B32	OUT	SoM IO Bank supply. [2)]
VCCIOC	J11.2	IN	SoM IO Bank supply. [2)]
VCCIOC	JB2.6	OUT	SoM IO Bank supply. [2)]
VCCIOD	J12.2	IN	SoM IO Bank supply. [2)]
VCCIOD	JB2.8 / JB2.10 / J6.B1	OUT	SoM IO Bank supply. [2)]
SD_VCCA	J13.2	IN	Voltage for SD Level Shifter. [2)]
VCCJTAG	JB2.92	IN	
ETH-VCC	JB1.13	IN	

Table 6: Module power rails.

[1)] Direction:

- IN: Input from the point of view of this board.
- OUT: Output from the point of view of this board.

[2)] Select 1.8 V or 3.3 V via jumper. Refer to 4 x 5 SoM Integration Guide for further information.

8.2 Recommended Power up Sequencing

Sequence	Net name	Recommended Voltage Range	Pull-up/ down	Description	Notes
0	-	-	-	Configuration signal setup.	See Configuration and System Control Signals.
1	5VIN	_ [1)]	-	Main Power supply.	Carrier and SoM power supply. Power consumption depends mainly on design and cooling solution.
2	M3.3VOUT / M1.8VOUT	_ [1)]	-	SoM generated voltages.	These voltages can be used • to supply bank voltages, • to supply periphery and/or • as power good signal to enable external power regulators. Important: Consider maximum power consumption.
3	-	-	-	Apply voltages to Carrier powered external IO when voltages M3.3VOUT and/or M1.8VOUT are present.	

Table 7: Baseboard Design Hints

[1)] Refer to Recommended Operating Conditions.

9 Board to Board Connectors

> These connectors are hermaphroditic. Odd pin numbers on the module are connected to even pin numbers on the baseboard and vice versa.

4 x 5 modules use two or three Samtec Razor Beam LSHM connectors on the bottom side.

- 2 x REF-189016-02 (compatible to LSHM-150-04.0-L-DV-A-S-K-TR), (100 pins, "50" per row)
- 1 x REF-189017-02 (compatible to LSHM-130-04.0-L-DV-A-S-K-TR), (60 pins, "30" per row) (depending on module)

9.1 Connector Mating height

When using the same type on baseboard, the mating height is 8mm. Other mating heights are possible by using connectors with a different height

Order number	Connector on baseboard	compatible to	Mating height
23836	REF-189016-01	LSHM-150-02.5-L-DV-A-S-K-TR	6.5 mm
	LSHM-150-03.0-L-DV-A-S-K-TR	LSHM-150-03.0-L-DV-A-S-K-TR	7.0 mm
23838	REF-189016-02	LSHM-150-04.0-L-DV-A-S-K-TR	8.0 mm
	LSHM-150-06.0-L-DV-A-S-K-TR	LSHM-150-06.0-L-DV-A-S-K-TR	10.0mm
26125	REF-189017-01	LSHM-130-02.5-L-DV-A-S-K-TR	6.5 mm
	LSHM-130-03.0-L-DV-A-S-K-TR	LSHM-130-03.0-L-DV-A-S-K-TR	7.0 mm
24903	REF-189017-02	LSHM-130-04.0-L-DV-A-S-K-TR	8.0 mm
	LSHM-130-06.0-L-DV-A-S-K-TR	LSHM-130-06.0-L-DV-A-S-K-TR	10.0mm

Table 8: Connectors.
The module can be manufactured using other connectors upon request.

9.2 Connector Speed Ratings

The LSHM connector speed rating depends on the stacking height; please see the following table:

Stacking height	Speed rating
12 mm, Single-Ended	7.5 GHz / 15 Gbps
12 mm, Differential	6.5 GHz / 13 Gbps
5 mm, Single-Ended	11.5 GHz / 23 Gbps
5 mm, Differential	7.0 GHz / 14 Gbps

Table 9: Speed rating.

9.3 Current Rating

Current rating of Samtec Razor Beam™ LSHM B2B connectors is 2.0A per pin (2 adjacent pins powered).

9.4 Connector Mechanical Ratings

- Shock: 100G, 6 ms Sine
- Vibration: 7.5G random, 2 hours per axis, 3 axes total

10 Technical Specifications

The values for Absolute Maximum Ratings and Recommended Ratings refers **only** to this carrier board. These values represent the capabilities of this Carrier Series in general. Assembly variants may differ from this values.

The combination of a carrier and a SoM might have different requirements. Customer devices connected to the carrier are not considered.

10.1 Absolute Maximum Ratings *)

Power Rail Name/ Schematic Name	Description	Min	Max	Unit
5VIN	Carrier power.	-40	60	V
M3.3VOUT	SoM power rail.	-0.3	6.3	V
M1.8VOUT	SoM power rail.	-0.3	4.6	V
VBAT	Battery supply.	-	-	V
VCCIOA	IO Bank supply for SoM.	-	-	V
VCCIOC	IO Bank supply for SoM.	-	-	V
VCCIOD	IO Bank supply for SoM.	-	-	V
VCCJTAG	JTAG reference voltage.	_ 1)	_ 1)	V

Table 10: Absolute maximum ratings

1) Refer to TE0790 TRM for XMOD usage.

*) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Condition. Exposure to absolute-maximum rated conditions for extended periods may affect device reliability.

10.2 Recommended Operating Conditions

This TRM is generic for all variants. Temperature range can be different depending on the assembly version. Voltage range is mostly the same during variants (exceptions are possible, depending on custom request).

10.2.1 Temperature range

The carrier board components are capable of being operated at industrial-grade temperatures, which cover at least the range of -40 °C to +85 °C.

Operating temperature range depends also on customer design and cooling solution.

10.2.2 Voltage rails

Parameter	Min	Max	Units	Reference Document
5VIN	4.75	5.25	V	
M3.3VOUT	3.15	3.45	V	
M1.8VOUT	1.71	1.89	V	
VBAT	-	-	V	
VCCIOA	-	-	V	
VCCIOC	-	-	V	
VCCIOD	-	-	V	
VCCJTAG	_ [1)]	_ [1)]	V	

Table 11: Recommended operating conditions.

[1)] Refer to TE0790 TRM for XMOD usage.

10.3 Physical Dimensions

- Module size: 100 mm × 64.5 mm. Please download the assembly diagram for exact numbers.
- PCB thickness: 1.71 mm ±10 %
- B2B mating height with standard connectors: 8 mm.

All dimensions are given in millimeters.

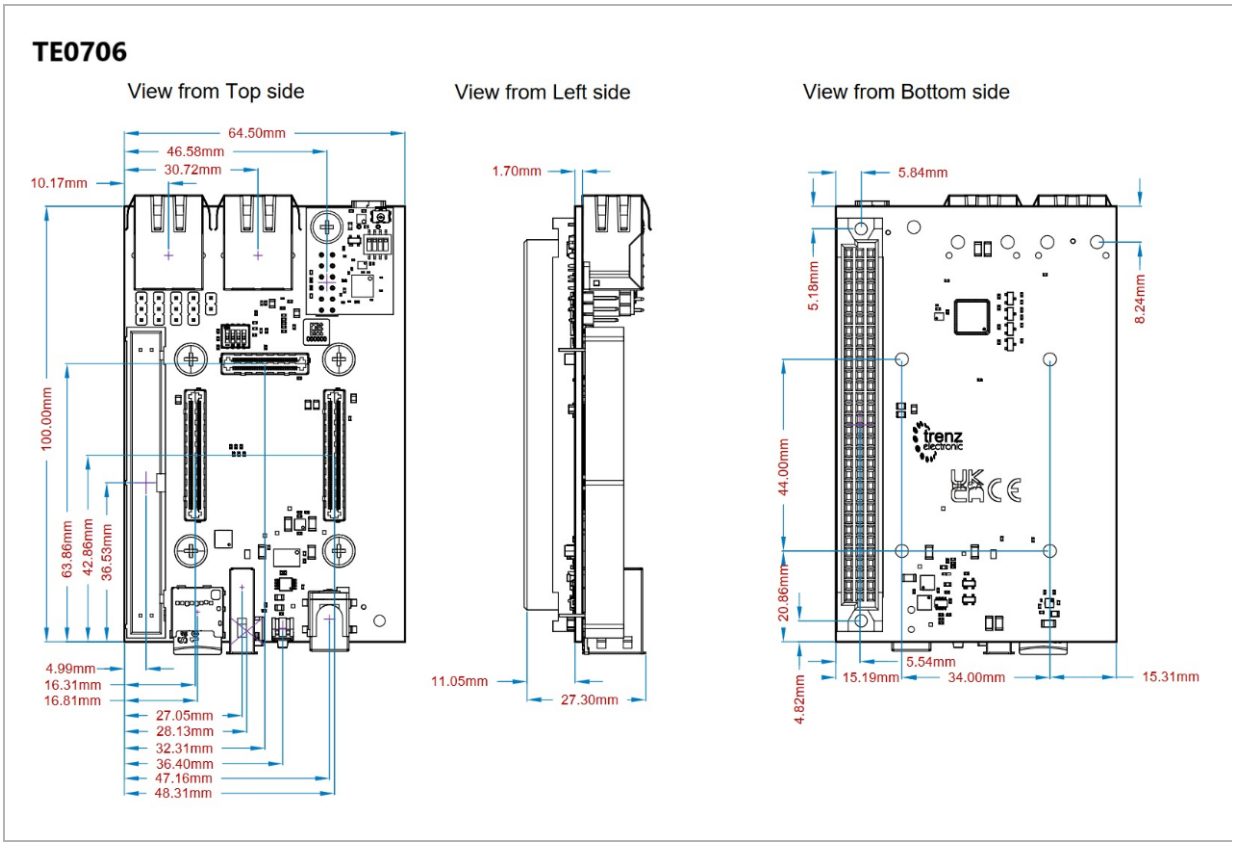

Figure 3: Physical Dimension

11 Currently Offered Variants

Trenz shop TE0706 overview page	
English page	German page

Table 12: Trenz Electronic Shop Overview

12 Revision History

12.1 Hardware Revision History

The hardware revision number is located on the PCB adjacent to the module identifier, separated by a dash.

Figure 4: Board hardware revision number.

Date	Revision	Changes	Documentation Link
2024-05	04	1. EOL component U3 EN5311QI was replaced with MPM3834CGPA-Z. 2. EOL component U1 EN6347QI was replaced with MPM3860GQW-Z. 3. Q1 TPS27081ADDCR was replaced with MP5077GG-Z. 4. L3, L5 Ferrite beads BKP0603HS121-T replaced with MPZ0603S121HT000. 5. EOL SMD component J9 was replaced with THT. 6. SMD Pin Headers J10 - J13 were replaced with THT. 7. Added Diode D1, D2 for USB ESD protection. 8. ETH PHY power supply modified: L1, R27 removed from schematic; for U6 DVDD supply used internal LDOs. 9. EOL component J4 micro SD Card was replaced. 10. Added series terminator R27 to avoid ringing effect. 11. Added series terminators R50 ... R55 to avoid ringing effect. 12. Added pull-up resistor R57 on RESIN. Not all 4x5 modules have an internal pull-up resistor for this pin on the module. 13. PGOOD connected to S1-1 DIP Switch and pulled-up by resistor R56 to 3.3V. 14. The signals were renamed: - VCCIOB ---> VCCIOC - VCCIOC ---> VCCIOD according to Trenz Module Connection Table. 15. Added testpoints TP1 - TP9. 16. Added mechanical components: - Screw M3x6 (2 pcs.); - Standoff M3x10; - U2 - TE0790-03 XMOD FTDI JTAG Adapter; - J14 - J18 - Jumpers 2.54 mm Pitch. 17. In assembly variant A resistor R39 is installed according to USB PHY specification. 18. Removed track-it traceability pad S/N. 19. Changed fiducials to standard fiducial type. 20. Components updated from the library. 21. Updated Trenz address. 22. Added UKCA- and RoHS-logo. 23. Added legal notices, block and power diagram. Updated revision history. Updated page count and order.	REV04 PCN

Date	Revision	Changes	Documentation Link
2018-12	03	1. MicroSD card connector (J3) changed to industrial. 2. Changed PB (S2) to industrial. 3. Replaced input power protection. 4. Added jumper (J13) to select SD level shifter voltage on FPGA side. 5. Added power switch for SD level shifter supply voltages to ensure power sequenzing of level shifter. 6. Replaced R5 and VBUS capacitors, add 0 Ohm resistors to OTG-ID. 7. Replaced jumpers by SMD versions. 8. Set VBAT pin header to assembled. 9. Replaced R34 by 953 kOhm and R38 by 147 kOhm. 10. Removed VG96 connector (J6) from BOM.	REV03 PCN PCN PCN
2016-06	02	1. Added support for 1.8 V IO TE0715-30 (added 3-pin headers for variable voltage banks). 2. PWR connector type changed THT->SMD. 3. Swapped xmod RX <>TX. 4. Added 0 Ohm to disconnect CLK125 for GT module compatibility. 5. Changed micro-USB. 6. Added ferrite beads L1. 7. Components updated from the library. 8. Added serial number (tracebility pad). 9. Added thermal vias to mounting holes. 10. Changed RJ45 connectors. 11. Improved SD_CLK signal. 12. Improved power input protection. 13. Improved power good handling. 14. Improved MDIO interface handling. 15. Updated clock revision. 16. Set VBAT pin header to not assembled. 17. U8 MP5010ADQ-LF-Z replaced to MP5010BDQ-LF-Z.	REV02 PCN

Date	Revision	Changes	Documentation Link
2015-06	01	Initial revision	REV01

Table 13: Hardware Revision History

12.2 Document Change History

Date	Revision	Contributors	Description
2026-01-12	v.90	John Hartfiel	• Added DIP Switch default setting to On board peripherals.
2025-08-27	v.89	Martin Rohrmüller	• Added S1, S2, J10, J11, J12, J13 with function and description to On board peripherals. • Corrected typos
2025-05-13	v.87	Kilian Jahn	• Updated note 1) within section Key Features • Fixed Inter Page Links • Updated PDF & PDF-Web Link
2025-04-04	v.81	Kilian Jahn	• Updated to TRM version 4.3 • Updated TRM to hardware revision 04 • Adapted link "Download PDF version of this document"
2024-06-20	v.78	ED	• Updated to PCN-20231106 more clearly.
2023-11-07	v.77	ED	• Changed Xilinx to AMD. • Updated to PCN-20231106.
2021-02-19	v.76	John Hartfiel	• Note to PHY connection
2010-07-16	v.74	John Hartfiel	• update Physical Dimensions
2019-05-27	v.73	Martin Rohrmüller	• Updated to REV03 • Updated to TRM v28

Date	Revision	Contributors	Description
2018-06-03	v.66	John Hartfiel	• Add note to DIP settings
2017-11-10	v.64	John Hartfiel	• Replace B2B connector section
2017-11-09	v.60	Ali Naseri	• TRM revision to new common style
2017-07-06	v.52	Ali Naseri, Jan Kumann	• Hardware revision 02 specific changes.
2017-01-06	v.1	Ali Naseri	• initial document to board revision 02
---	all	Ali Naseri , ED , John Hartfiel , Jan Kumann , Kilian Jahn , Martin Rohrmüller	• ---

Table 14: Document change history.

13 Disclaimer

13.1 Data Privacy

Please also note our data protection declaration at https://www.trenz-electronic.de/en/Data-protection-Privacy

13.2 Document Warranty

The material contained in this document is provided “as is” and is subject to being changed at any time without notice. Trenz Electronic does not warrant the accuracy and completeness of the materials in this document. Further, to the maximum extent permitted by applicable law, Trenz Electronic disclaims all warranties, either express or implied, with regard to this document and any information contained herein, including but not limited to the implied warranties of merchantability, fitness for a particular purpose or non infringement of intellectual property. Trenz Electronic shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or of any information contained herein.

13.3 Limitation of Liability

In no event will Trenz Electronic, its suppliers, or other third parties mentioned in this document be liable for any damages whatsoever (including, without limitation, those resulting from lost profits, lost data or business interruption) arising out of the use, inability to use, or the results of use of this document, any documents linked to this document, or the materials or information contained at any or all such documents. If your use of the materials or information from this document results in the need for servicing, repair or correction of equipment or data, you assume all costs thereof.

13.4 Product Disclaimer

Products (incl. Software and Firmware) are exclusively designed, manufactured, and distributed for industrial applications. They are not intended, authorized, or certified for use in critical safety applications, medical devices, aerospace, nuclear, life-support, traffic-control, military, or other environments where malfunction or failure could result in personal injury, death, or significant property or environmental damage.

Trenz Electronic GmbH (“Manufacturer”) excludes any liability for inappropriate use in such contexts. The Customer bears all responsibility for verifying suitability and compliance with applicable regulations when deploying in any critical-use scenario. The Customer also agrees to indemnify and hold harmless the Manufacturer from any third-party claims or liabilities arising from such use.

13.5 Copyright Notice

13.6 Technology Licenses

The hardware / firmware / software described in this document are furnished under a license and may be used /modified / copied only in accordance with the terms of such license.

13.7 Environmental Protection

To confront directly with the responsibility toward the environment, the global community and eventually also oneself. Such a resolution should be integral part not only of everybody's life. Also enterprises shall be conscious of their social responsibility and contribute to the preservation of our common living space. That is why Trenz Electronic invests in the protection of our Environment.

13.8 REACH, RoHS and WEEE

REACH

Trenz Electronic is a manufacturer and a distributor of electronic products. It is therefore a so called downstream user in the sense of REACH. The products we supply to you are solely non-chemical products (goods). Moreover and under normal and reasonably foreseeable circumstances of application, the goods supplied to you shall not release any substance. For that, Trenz Electronic is obliged to neither register nor to provide safety data sheet. According to present knowledge and to best of our knowledge, no SVHC (Substances of Very High Concern) on the Candidate List are contained in our products. Furthermore, we will immediately and unsolicited inform our customers in compliance with REACH - Article 33 if any substance present in our goods (above a concentration of 0,1 % weight by weight) will be classified as SVHC by the European Chemicals Agency (ECHA).

RoHS

Trenz Electronic GmbH herewith declares that all its products are developed, manufactured and distributed RoHS compliant.

WEEE

Information for users within the European Union in accordance with Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE).

Users of electrical and electronic equipment in private households are required not to dispose of waste electrical and electronic equipment as unsorted municipal waste and to collect such waste electrical and electronic equipment separately. By the 13 August 2005, Member States shall have ensured that systems are set up allowing final holders and distributors to return waste electrical and electronic equipment at least free of charge. Member States shall ensure the availability and accessibility of the necessary collection facilities. Separate collection is the precondition to ensure specific treatment and recycling of waste electrical and electronic equipment and is necessary to achieve the chosen level of protection of human health and the environment in the European Union. Consumers have to actively contribute to the success of such collection and the return of waste electrical and electronic equipment. Presence of hazardous substances in electrical and electronic equipment results in potential effects on the environment and human health. The symbol consisting of the crossed-out wheeled bin indicates separate collection for waste electrical and electronic equipment.

Trenz Electronic is registered under WEEE-Reg.-Nr. DE97922676.

2025-08-01

02.09.2017