Company	Trenz Electronic GmbH
PCN Number	PCN-20240610
Title	TE0727-02 to TE0727-04 Hardware Revision Change
Subject	Hardware Revision Change
Issue Date	2024-08-26

1 Products Affected

This change affects all Trenz Electronic TE0727 SoMs: TE0727-02*.

Affected Product	Replacement
TE0727-02-41C34	TE0727-04-41C38

2 Changes

2.1 #1 Changed DCDC EP53A7HQI (U9, U13) / EP53A7LQI (U11, U12) to MPM3834CGPA-Z and adapted power circuit.

Type: Schematic Change

Reason: EOL of Component.

Impact: None. Minor changes in electrical characteristics.

2.2 #2 Changed flash (U5) from S25FL127SABMFV10 to S25FL128LAGMFI013.

Type: BOM change

Reason: EOL of Component.

Impact: None, no changes in our 2023.2 reference design are necessary. JEDEC manufacturer is still the same. Modified device IDs and temperature grade from -40° C - 105 °C to -40 °C - 85 °C.

2.3 #3 Changed I2C MUX PCA9540BGD,125 (U16) to PCA9540BDP,118.

Type: Schematic Change

Reason: EOL of Component.

Impact: None. Changed package.

2.4 #4 Changed MEMS oscillator (U7) from SiT8008AI-73-XXS-12.000000E to SiT8008BI-73-XXS-12.000000E.

Type: Schematic Change

Reason: EOL of Component.

Impact: None. Clock revision changed.

2.5 #5 Changed MEMS oscillator (U14) from SiT8008AI-73-XXS-33.333333E to SiT8008BI-73-XXS-33.333333E.

Type: BOM change

Reason: EOL of Component.

Impact: None. Clock revision changed.

2.6 #6 Changed MEMS oscillator (U15) from SiT8008AI-73-XXS-52.000000E to SiT8008BI-73-XXS-52.000000E

Type: BOM change

Reason: EOL of Component.

Impact: None. Clock revision changed.

2.7 #7 Changed SoC (U1) bank 35 power supply from 1.8 V to 3.3 V.

Type: Schematic Change

Reason: Use specified HDMI voltage levels.

Impact: None.

2.8 #8 Changed power-up sequencing.

Type: Schematic Change

Reason: Improve power-on sequence.

Impact: None. Updated power sequence.

2.9 #9 Changed power multiplexer (U10) current limit from 1.24 A to 2.037 A via resistor (R28) change from 100 kOhm to 56 kOhm.

Type: Schematic Change

Reason: Improve boot-up process.

Impact: None. Improved boot-up process.

2.10 #10 Added DIP switch (S1) and resistor (R53) to enable JTAG only boot mode.

Type: Schematic Change

Reason: QSPI programming problems with newer Vivado versions.

Impact: None. JTAG boot mode directly accessible. Fix QSPI programming problems with newer Vivado versions according to AR#00002 - QSPI Programming issues[1].

2.11 #11 Changed ferrid bead (L1 ... L7, L10) from BKP0603HS121-T to MPZ0603S121HT000.

Type: BOM Change

Reason: EOL of component.

Impact: None.

2.12 #12 Changed LED (D1 ... D3) from 150060VS75000 to 19-213/G6C-BM1N2/DT.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.13 #13 Renamed signal name from "SPI-DQ0/M0" to "SPI-DQ0/M3" and signal name from "SPI-DQ3/M3" to "SPI-DQ3/M0".

Type: Schematic Change

Reason: Use AMD boot mode name convention.

Impact: None.

1 https://wiki.trenz-electronic.de/pages/viewpage.action?pageId=105689937

2.14 #14 Added pull-up resistor assembly option (R140) (default: not fitted) for signal "DDR3-CKE".

Type: Schematic Change

Reason: Follow AMD recommendation.

Impact: None.

2.15 #15 Added optional connection between FTDI chip (U3) signal ADBUS0 and signal ADBUS4 via resistor (R63) (default: not fitted).

Type: Schematic Change

Reason: Improve JTAG usage.

Impact: None.

2.16 #16 Added additional decoupling capacitors C52, C53, C73.

Type: Schematic Change

Reason: Follow AMD recommendation.

Impact: None.

2.17 #17 Changed capacitor (C55, C56) from 470 nF, 0201 to 47 µF, 0603.

Type: Schematic Change

Reason: Follow AMD recommendation.

Impact: None.

2.18 #18 Changed capacitor (C51) from 470 nF, 0201 to 10 µF, 0402.

Type: Schematic Change

Reason: Follow AMD recommendation.

Impact: None.

2.19 #19 Changed capacitor (C1, C4, C12, C15, C18, C19, C24, C35, C57, C63, C65, C79, C81, C87, C89) from 4.7 µF to 10 µF.

Type: Schematic Change

Reason: Follow AMD recommendation.

Impact: None.

2.20 #20 Changed 10 µF capacitor (C13, C25) from 10 %, 0805 to 20 %, 0402.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.21 #21 Changed capacitor (C29, C32, C33, C41, C42, C43, C44, C47) from 10 µF, 0402 to 22 µF, 0603.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.22 #22 Changed capacitor (C86) from 10 µF to 47 µF.

Type: Schematic Change

Reason: Follow AMD recommendation.

Impact: None.

2.23 #23 Changed capacitor (C85) from 10 µF, 10 V, 10 %, 0805 to 47 µF, 6.3 V, 20 %, 0603.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.24 #24 Changed 47 µF capacitor (C7, C16, C54, C71, C93) from 0805 to 0603.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.25 #25 Changed testpoint (TP1, TP3, TP5, TP7) from 1 mm to 0.8 mm diameter.

Type: PCB Change

Reason: Harmonize testpoints.

Impact: None.

2.26 #26 Added block and power diagram. Updated legal notices and revision history.

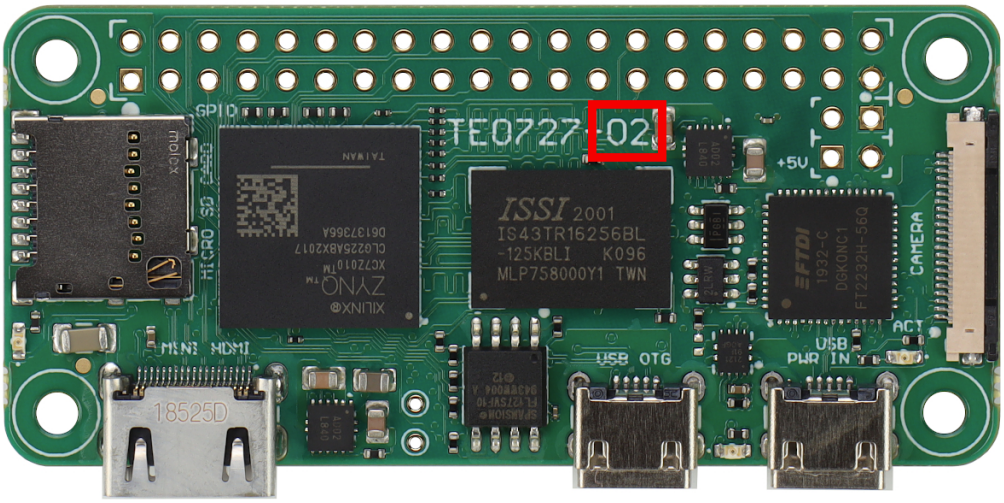
Type: Documentation Update

Reason: Documentation improvement.

Impact: None.

3 Method of Identification

The revision number is printed on the top side of the PCB.



4 Production Shipment Schedule

This change takes place with immediate effect. If the new revision is not suitable for your application and still the former revision of the board is needed, please contact us.

5 Contact Information

If you have any questions related to this PCN, please contact Trenz Electronics Technical Support at

- forum.trenz-electronic.de[2]
- wiki.trenz-electronic.de[3]
- support%trenz-electronic.de[4] (subject = PCN-20240610)
- phone
  - national calls: 05741 3200-0
  - international calls: 0049 5741 3200-0

2 http://forum.trenz-electronic.de/
3 http://wiki.trenz-electronic.de/
4 mailto:support@trenz-electronic.de?subject=PCN-20240610

6 Disclaimer

Any projected dates in this PCN are based on the most current product information at the time this PCN is being issued, but they may change due to unforeseen circumstances. For the latest schedule and any other information, please contact your local Trenz Electronic sales office, technical support or local distributor.

This PCN follows JEDEC Standard J-STD-046.