

Company	Trenz Electronic GmbH
PCN Number	PCN-20240618
Title	TE0841-02 to TE0841-03 Hardware Revision Change
Subject	Hardware Revision Change
Issue Date	2024-08-27

1 Products Affected

This change affects all Trenz Electronic TE0841-02 SoMs: TE0841-02*.

Affected Product	Changes	Replacement
TE0841-02-31C21-A	#1 ... #24	TE0841-03-31C31-A
TE0841-02-31C31-A	#2 ... #24	TE0841-03-31C31-A
TE0841-02-31I21-A	#1 ... #24	TE0841-03-31I31-A
TE0841-02-31I21-T	#1 ... #24	TE0841-03-31I31-T
TE0841-02-32I21-A	#1 ... #24	TE0841-03-32I31-A
TE0841-02-41C21-A	#1 ... #24	TE0841-03-41C31-A
TE0841-02-41I21-A	#1 ... #24	TE0841-03-41I31-A
TE0841-02-41I21-L	#1 ... #24	TE0841-03-41I31-L

2 Changes

2.1 #1 Changed DDR4 SDRAM (U4, U5) from K4A8G165WB-BIRC to K4A8G165WC-BITDTCV.

Type: BOM change

Reason: BOM Optimization.

Impact: New DDR timings may be considered in designs. DDR4 setup used in Trenz reference designs is known to work still.

2.2 #2 Changed DCDC EN63A0QI (U7, U14) to LTM4638EY#PBF

Type: Schematic change

Reason: EOL of component.

Impact: Increased component height may be considered. Maximum continuous output current increased from 12 A to 15 A per DCDC.

2.3 #3 Increased voltage from 1.35 V to 1.42 V via voltage divider resistor (R11) and changed voltage rail name accordingly from PL_GT_1V35 to PL_GT_1V42.

Type: Schematic Change

Reason: Improve voltage rail behaviour.

Impact: None.

2.4 #4 Changed load switch TPS27082LDDCR (Q1) to MP5077GG-Z and adapted circuit.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None. Minor changes in electrical characteristics.

2.5 #5 Changed clock (U11) from DSC1123DL5-200.0000 to SIT9121AI-2B1-XXE-200.00000.

Type: Schematic Change

Reason: BOM Optimization.

Impact: Decreased stability from ± 10 ppm to ± 20 ppm. Decreased temperature range from (-40 °C to 105 °C) to (-40 °C to 85 °C). Increased mechanical size.

2.6 #6 Added optional power supervisor STM6710LWB6F (U21) and connected it to system controller (U18) pin 5 via net "PG_ALL" which is pulled-up to power rail "3.3VIN" with resistor (R83).

Type: Schematic Change

Reason: Improve power monitoring.

Impact: Improved power monitoring circuit by supervising additional voltage rails. If monitored voltages are out of range signal "PG_ALL" is triggered.

2.7 #7 Added diode (D2) between signals "INIT_B" and "PROG_B".

Type: Schematic Change

Reason: Keep FPGA in reset while signal "PROG_B" is low during initial power-up.

Impact: None.

2.8 #8 Added pull-up resistor (R79 ... R82) for signals "PROG_B", "INIT_B", "DONE", "PG_GT".

Type: Schematic Change

Reason: Use external pull-up resistor.

Impact: None.

2.9 #9 Used additional decoupling capacitor (C70 ... C84, C89).

Type: Schematic Change

Reason: Improve power supply.

Impact: None.

2.10 #10 Changed ferrid bead (L1 ... L6) from BKP0603HS121-T to MPZ0603S121HT000.

Type: BOM Change

Reason: EOL of component.

Impact: None.

2.11 #11 Changed capacitor (C49) from 4.7 μ F, 6.3 V, 0402 to 10 μ F 16 V, 0603.

Type: Schematic Change

Reason: Increase voltage rating.

Impact: None.

2.12 #12 Changed 22 μ F capacitor (C23, C28, C30, C32, C34) from 6.3 V to 10 V.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.13 #13 Changed 47 μ F capacitor (C1, C3 ... C6, C13 ... C15, C60) from 0805 to 0603.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.14 #14 Changed 100 μ F capacitor (C61) from 6.3 V, 1206 to 4 V, 0805.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.15 #15 Changed resistor (R35) from 4.7 kOhm 50 mW, 0201 to 2.37 kOhm 63 mW, 0402.

Type: Schematic Change

Reason: Follow AMD recommendation.

Impact: None.

2.16 #16 Changed resistor (R25, R26, R52, R57) from 4.7 kOhm 50 mW, 0201 to 23.7 kOhm 63 mW, 0402.

Type: Schematic Change

Reason: Decrease current flow through resistor.

Impact: None.

2.17 #17 Set resistor (R71) to not fitted.

Type: Schematic Change

Reason: BOM Optimization.

Impact: None.

2.18 #18 Added testpoint (TP3 ... TP37).

Type: Schematic Change

Reason: Power and signal monitoring improvement.

Impact: None.

2.19 #19 Swapped clock (U11) net name "CLK200M_P" and "CLK200M_N" at pin 4 and 5.

Type: Schematic Change

Reason: Documentation improvement.

Impact: None.

2.20 #20 Removed track-it traceability pad S/N.

Type: Schematic Change

Reason: EOL of Component.

Impact: None.

2.21 #21 Added CE-, UKCA- and RoHS-logo.

Type: PCB Change

Reason: Improve product classification.

Impact: None.

2.22 #22 Updated components from library.

Type: Schematic Change

Reason: Use latest component data.

Impact: None.

2.23 #23 Signal trace lengths changed

Type: PCB change

Reason: Result of changes above.

Impact: Changed trace length have to be taken into account in existing designs. The trace length for new revision will be available in [TE0841 series pinout generator](#)¹. Please check if change in trace length still matches your requirements. Adaption of carrier may be necessary.

2.24 #24 Added legal notices, system and power diagram. Updated revision history. Updated page count and order.

Type: Documentation Update

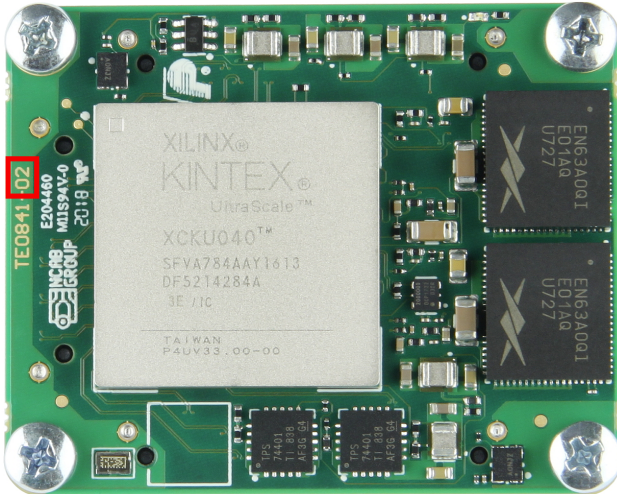
Reason: Documentation improvement.

Impact: None.

¹ https://shop.trenz-electronic.de/trenzdownloads/Trenz_Electronic/Pinout/4x5_series_pinout_tracelength.xlsx

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.de²
- wiki.trenz-electronic.de³
- support@trenz-electronic.de⁴ (subject = PCN-20240618)
- 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-20240618>

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.