

TE0703 TRM REV01 - REV04

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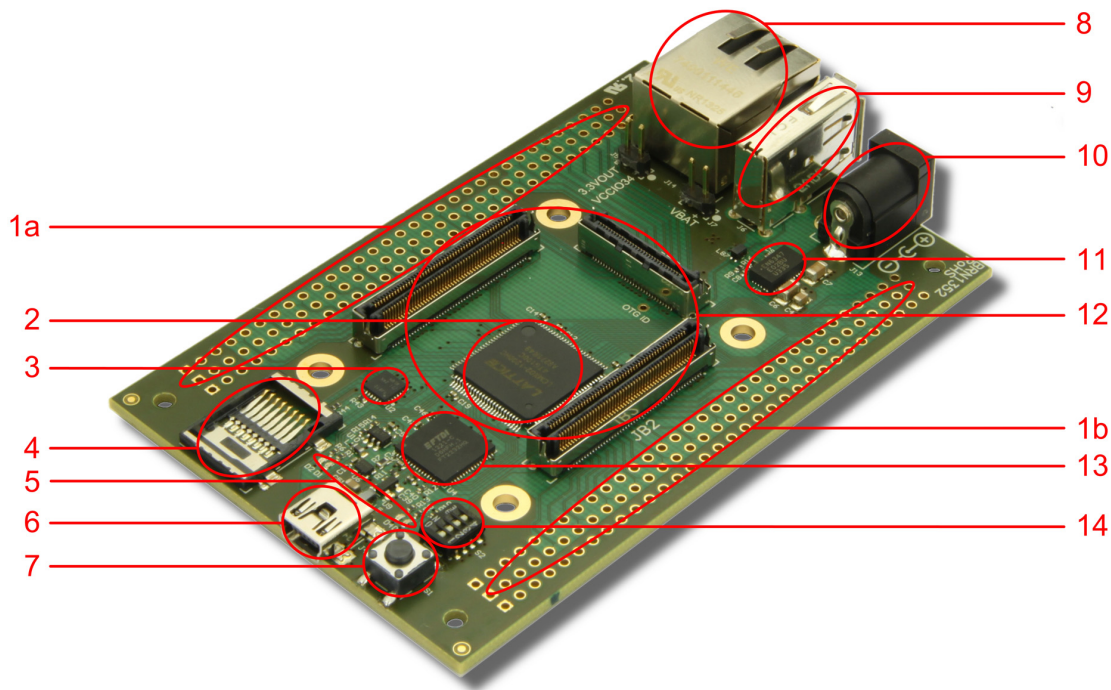


Figure 1: TE0703 (REV 01).

Overview

Features

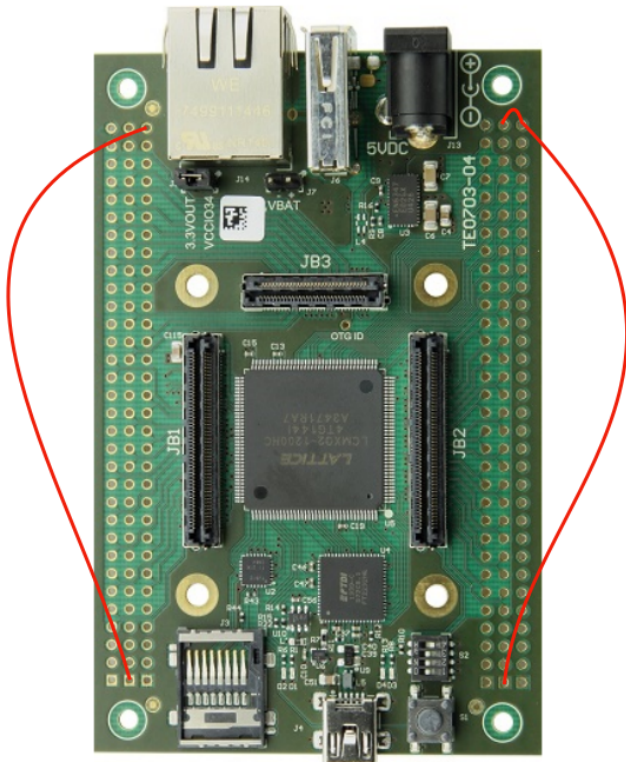
1. VG96 Connectors (Mounting Holes and Solder Pads)
2. Carrier Controller CPLD ([Lattice LCMXO2-1200HC](#))
3. SD Card level-shifter
4. Micro SD Card Connector
5. LEDs
6. Mini USB Connector FT2232H
7. User Push Button
8. RJ45 GbE Connector
9. USB Host Connector
10. Barrel jack for 5V Power Supply
11. 4A High-Efficiency DC-DC Step-Down Converter for 3.3V Power Supply
12. Trenz 4x5 Module Socket (3x [Samtec LSHM Series Connectors](#))
13. USB JTAG and UART Interface ([FTDI FT2232H](#)), compatible with Xilinx Tools
14. DIP Switch



Note: TE0703 must be powered by a 5V power supply!

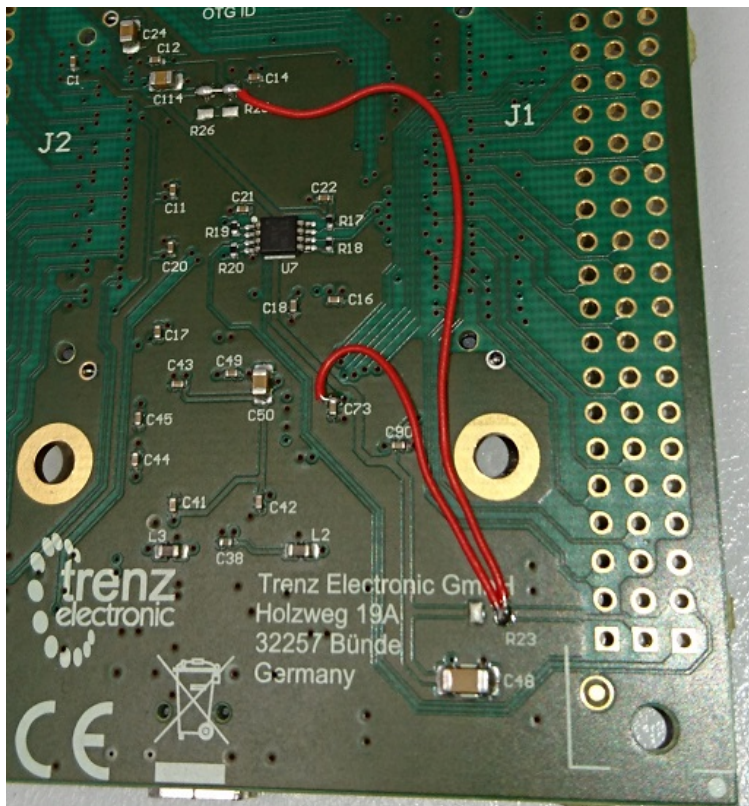
User I/O Connectors

Note: VCCIO for FPGA banks is has no default fixed connection to power supply. Those the bank VCCIO must be supplied to externally, or optionally 0 ohm resistors can be soldered onto TE0703 to set fixed 3.3V voltages.



Example wiring that powers ALL banks with 3.3V - those connections should be present on the base board, in this drawing 3 banks are have VCCIO supplied over connector and 4th bank is connected to 3.3V with jumper J5.

TE0715-30 modification



REMOVE jumper J5, add wires as on picture for VCCIO=1.8V for all banks.

UART

FT2232H USB interface Channel B is normally used as UART, in default CPLD configuration UART pins are routed to Module connector to location of default UART pins.

FT2232H Channel B	B2B	TE0715	TE0720	TE0710	TE0711	TE0712	TE0713	TE0741	Notes
TXD	JM1.92	MIO14	MIO14	A8	N17	P16	A10	J21	Module input
RXD	JM1.85	MIO15	MIO15	B8	R10	U18	C11	G24	Module output

LEDs

Two LED's (those closer to mini-USB Connector) are connected to the 4x5 B2B Connector pins. Those LEDs can be controlled by FPGA Module.

LED	Net Name	Color	B2B/Module	TE0710	TE0711	TE0712	TE0713	TE0715	TE0720	TE0741
D3	FLED1	Red	JM2.100	U8	F5	J16	U8	H6	U7	U21
D4	FLED2	Green	JM2.89	K6	J5	M17	K6	H5	R7	Y20



The bank where LED's are is not powered when TE0703 is used in standalone mode. VCCIO for this bank must be supplied back to the TE0703 connectors. TE0703 header Pin J2.B1 must have some valid I/O voltage or the LED's will not be lit. To connect 3.3V to this bank install 0R or solder bridge to empty place of R26 on the bottom of the PCB.



If the Bank where LED's are has VCCIO 1.8V then the LED's will lit with very low intensity.

Two LED's closer to the micro SD Card are connected to CPLD and not Module Connectors, their function depends on the CPLD Version.

			Notes
D1	ULED1	Red	FTDI UART Receive activity
D2	ULED2	Green	FTDI UART Transmit activity

Default function of the User LED's. Note the function of this LEDs is controlled by the CPLD and can be changed.

I2C Level Shifter

TE0703 has a I2C level shifter IC on-board, there are however no I2C devices on TE0703. Those pins that go through level shifter can be used I2C bus, or as GPIO.

Net		B2B/Module	TE0715	TE0720	TE0710	TE0711	TE0712	TE0713	TE0741
SCL		JM1.95	MIO10	MIO10	R10	M13	T21	B9	L22
SDA		JM1.93	MIO11	MIO11	L18	L18	Y22	A9	K21

Micro SD Card Socket

The Micro SD Card Socket do not include a Card detect signal and Write Protect signal. It is not directly connected to the 4x5 B2B Connector pins, but through a SDIO port expander, TI [TXS02612](#). This device is used for voltage translation, due to the different voltage levels between Micro SD Card and MIO Bank 501 on the Zynq 7000 . (The Micro SD Card is 3.3V, but the MIO Bank 501 is set to 1.8V.)

Signal Name	Description	Net Name	B2B/Module	TE0715	TE0720
DATA[3]	Data	DAT3	JM1.17	MIO45	MIO45
DATA[2]	Data	DAT2	JM1.19	MIO44	MIO44
DATA[1]	Data	DAT1	JM1.21	MIO43	MIO43
DATA[0]	Data	DAT0	JM1.23	MIO42	MIO42
CMD	Command	CMD	JM1.25	MIO41	MIO41
CLK	Clock	S_CLK	JM1.27	MIO40	MIO40


DIP Switch settings

4	MODE = LOW	MODE = HIGH	Module "MODE" Pin level, select between boot-modes (SPI <-> SD for Zynq modules)
3	Normal mode	CC Update mode	JTAG Select: fixed function can not be changed
2			
1			

Function of MODE pin is module dependent!

Carrier Controller Update Mode


Carrier Controller JTAG port is enabled by setting switch 3 on DIP switch S2 on TE0703 to "OFF" position. This setting is only useful when updating Carrier Controller firmware! In this mode Module JTAG is not accessible.

 Switch 3 on DIP switch S2 must be moved to "ON" position for normal operation! Otherwise the JTAG on the module would not be accessible at all.

Configuring B34 Bank Supply for TE0720 Zynq SoC Module


J5 Jumper can be used to power TE0720 bank 34 from TE0720 3.3V output rail. If J5 is installed TE0720 will boot also in the case bank 34 supply is not delivered from the VG96 /Pin headers. If TE0720 bank supply of 3.3V is required it is recommended to insert the jumper. Optionally, 3.3V or any other valid IO voltage can be supplied from the TE0703 pins.

Use with TE0715

 Care should be taken with TE0715-30, all I/O should be set to 1.8V

Backup Battery Supply (VBAT connector)

J7 provides two pins (+/-) to supply battery backup voltage to TE0720. If not required leave open.

 Ensure to connect the supply battery to jumper J7 with correct polarity!

Revision History

REV 04

- corrected Pull up on U10
- PCB cosmetic changes

Document Change History

date	revision	authors	description
2014-02-12	 Unknown macro: 'metadata'	Antti Lukats, Sven-Ole Voigt	Work in progress
	All	 Unknown macro: 'metadata'	

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

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Error rendering macro 'page-info'

Ambiguous method overloading for method `jdk.proxy279.$Proxy4022#hasContentLevelPermission`. Cannot resolve which method to invoke for `[null, class java.lang.String, class com.atlassian.confluence.pages.Page]` due to overlapping prototypes between: `[interface com.atlassian.confluence.user.ConfluenceUser, class java.lang.String, class com.atlassian.confluence.core.ContentEntityObject]` `[interface com.atlassian.user.User, class java.lang.String, class com.atlassian.confluence.core.ContentEntityObject]`