4 x 5 SoM Carriers

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Legend

- ⚠️ : Attention: Carrier/Module combination only with special condition or PCB modification possible
- ✅: Supported
- ⭐: Supported with limitations
- ❌: Not Supported
- ❓: Table currently not complete, see TRM of module and carrier

TE0701

	FMC(1)	FMC Vadj	PMODS	ETH	HDMI	CL Connector(5)	SD Card	USB Host	VBATT
TE0710	⭐	❓	❓	❓	❌, N.C.	❌, N.C.	❌, 3.3V B16 I/O	❌	❌
TE0711	⭐	❓	❓	❌	✅	❓	⭐,1.8V B16 I/O	❌, device only(14)	❌
TE0712	⭐	❓	❓	⭐,100 MBit*	✅	⭐,MGT's	⭐,1.8V B13 I/O	❌	❌
TE0713	⭐	❓	❓	❌	❌	⭐,MGT's	⭐,1.8V B13 I/O	❌, device only(14)	❌
TE0715-15	⭐	✅	❓	✅	✅	⭐,MGT's	✅	✅	⭐, RTC and Key RAM
TE0715-30 ⚠️(2)	⭐	⭐,Max 1.8V	❓	✅	✅	⭐,MGT's	✅	✅	⭐, RTC and Key RAM
TE0720	⭐	✅	✅	✅	✅	✅,LVDS	✅	✅	⭐, RTC and Key RAM
TE0741 ⚠️(4)	⭐	❓	❓	❌	✅	⭐,MGT's	❌,MGT's	❌	❌
TE0820 ⚠️(2)	⭐	⭐,Max 1.8V	❓	✅	✅	⭐,MGT's	⭐(6)	✅	⭐, PSBATT(7)
TE0821 ⚠️(2)	⭐	⭐,(Max 1.8V)	❓	✅	❓	⭐,MGT's	⭐(6)	✅	⭐, PSBATT(7)
TE0823 ⚠️(2)	⭐	⭐,Max 1.8V	❓	✅	❓	⭐,MGT's	⭐(6)	✅	⭐, PSBATT(7)
TE0841 ⚠️(2)(3)	⭐	❓	❓	❌	✅	⭐,MGT's	❌,MGT's	❌	⭐, Key RAM

- (1) FMC is a LPC Connector (no gigabit transceivers) on TE0701: I2C and JTAG access over CPLD.
  Separate TE0701_FMC_PINOUT table (PDF/XLSX) is available on: Trenz_Electronic Download-Pinout
- (2) HP IO Banks only support 1.8V
- (3) MGT's Lanes goes to SD-Level shifter, it's recommended to desoldering level shifter
- (4) MGT's Lanes goes to SD-Level shifter, but module side 1.8V is not connected
- (5) CL Connector is usable as Cameralink only with module that map LVDS pins to this connector
- (6) Works, but without carrier board modification out of specification: TE0701 SD Levelshifter powered fix by 1.8V, TE0820 SD MIO-Bank by 3.3V.
- (7) PS battery operated voltage (1.2V–1.5V).
- (14) via FTDI FIFO bridge, VBUS Network is default assembled for host usage

TE0703

	ETH	SD Card	USB Host	Reset	User LEDs	USB UART	USB JTAG
TE0710	?	★, 3.3V B16 I/O	✗	✓	★, 2 LEDs	✓	✓
TE0711	✗	★, 1.8V B16 I/O	✗, device only(14)	✓	?	✓	✓
TE0712	★, 100 MBit	★, 1.8V B13 I/O	✗	✓	?	✓	✓
TE0713	✗	★, 1.8V B13 I/O	✗, device only(14)	✓	?	✓	✓
TE0715-15	✓	✓	✓	✓	?	✓	✓
TE0715-30 ⚠(2)	✓	✓	✓	✓	?	✓	✓
TE0720	✓	✓	✓	✓	?	✓	✓
TE0741 ⚠(4)	✗	✗, MGTs	✗	✓	?	✓	✓
TE0820 ⚠(2)	✓	✓(6)	✓	?	?	✓	✓
TE0821 ⚠(2)	✓	✓(6)	✓	?	?	✓	✓
TE0823 ⚠(2)	✓	✓(6)	✓	?	?	✓	✓
TE0841 ⚠(2)(3)	✗	✗, MGTs	✗	✓	?	✓	✓
TEG2000	✗	★, 1.8V Bank SB I/O	✗	✓	★, 1 LED	✓	✓

- (2) HP IO Banks only support 1.8V
- (3) MGT's Lanes connected to SD-Level shifter: TE0703-06: Leave J11 open; TE0703-05 and before: It's recommended to desolder level shifter.
- (4) MGT's Lanes connected to SD-Level shifter, but module side 1.8V is not connected.
- (6) REV06 select correct SDIO voltage by jumper J11. REV05 and before: Works, but without carrier board modification out of specification (TE0703 SD Levelshifter powered fix by 1.8V, TE0820 SD MIO-Bank by 3.3V).
- (14) via FTDI FIFO bridge, VBUS Network is default assembled for host usage

TE0705

	PMODS	ETH	SD Card	USB Host
TE0710	?	?	✗, 3.3V B16 I/O	✗
TE0711	?	✗	★,1.8V B16 I/O	✗, device only(14)
TE0712	?	100 MBit	★,1.8V B13 I/O	✗
TE0713	?	✗	?	✗, device only(14)
TE0715-15	?	✓	✓	✓
TE0715-30 ⚠(2)	?	✓	✓	✓
TE0720	✓	✓	✓	✓
TE0741 ⚠(4)	?	✗	✗,MGT's	✗
TE0820 ⚠(2)	?	✓	★(6)	✓
TE0821 ⚠(2)	?	✓	★(6)	✓
TE0823 ⚠(2)	?	✓	★(6)	✓
TE0841 ⚠(2)(3)	?	✗	✗,MGT's	✗

- (2) HP IO Banks only support 1.8V
- (3) MGT's Lanes goes to SD-Level shifter, it's recommended to desoldering level shifter

- (4) MGT's Lanes goes to SD-Level shifter, but module side 1.8V is not connected
- (6) Works, but without carrier board modification out of specification: TE0705 SD Levelshifter powered fix by 1.8V, TE0820 SD MIO-Bank by 3.3V.
- (14) via FTDI FIFO bridge, VBUS Network is default assembled for host usage

TE0706

	ETH1	ETH2	SD Card	USB Host
TE0710	?	?	★, 3.3V B16 I/O	✗
TE0711	✗	?	★, 1.8V B16 I/O	✗, device only(14)
TE0712	100 MBit	?	★, 1.8V B13 I/O	✗
TE0713	✗	?	?	✗, device only(14)
TE0715-15	✓	✓	✓	✓
TE0715-30 ⚠(2)	✓	✓	✓	✓
TE0720	✓	✓	✓	✓
TE0741 ⚠(4)	✗	?	✗, MGTs	✗
TE0820 ⚠(2)	✓	?	✓(6)	✓
TE0821 ⚠(2)	✓	?	✓(6)	✓
TE0823 ⚠(2)	✓	?	✓(6)	✓
TE0841 ⚠(2)(3)	✗	?	✗, MGTs	✗

- (2) HP IO Banks only support 1.8V
- (3) MGT's Lanes connected to SD-Level shifter: TE0703-06: Leave J11 open; TE0703-05 and before: It's recommended to desolder level shifter.
- (4) MGT's Lanes connected to SD-Level shifter, but module side 1.8V is not connected.
- (6) REV03 select correct SDIO voltage by jumper. REV02 and before: Works, but without carrier board modification out of specification (TE0703 SD Levelshifter powered fix by 1.8V, TE0820 SD MIO-Bank by 3.3V).
- (14) via FTDI FIFO bridge, VBUS Network is default assembled for host usage

TEB0707

	ETH	SD Card	USB Host	HS CA(15)	HS CB(15)	HS CC(15)	LS CA (16)	User LEDs (17)	USB UART	USB JTAG
TE0710	?	★, 3.3V B16 I/O	✗	✓	✗	✓	✓	✓	✓	✓
TE0711	✗	★, 1.8V B16 I/O	✗	✓	✓	✓	✓	✓	✓	✓
TE0712	100 MBit	★, 1.8V B13 I/O	✗	✓	★, some fix 3.3V B14 I/O	✓	✓	✓	✓	✓
TE0713	✗	?	✗	✓	✗(19)	✓	✓	✓	✓	✓
TE0715-15	✓	✓	✓	✓	✓	✓	✓	✓ (3x PL, 3x PS)	✓	✓
TE0715-30 ⚠(2)	✓	✓	✓	✓, max 1.8 V	✓, max 1.8V	✓	✓	✓ (3x PL, 3x PS)	✓	✓
TE0720	✓	✓	✓	✓	✓	✓	✓	✓ (3x PL, 3x PS)	✓	✓
TE0741 ⚠(4)	✗	✗, MGTs	✗	✓(18)	✓	✓	✓	✓	✓	✓
TE0820 ⚠(2)	✓	✓(6)	✓	✓, max 1.8 V	✓, max 1.8V	✓, max 1.8 V	✓	✓ (3x PL, 3x PS)	✓	✓

TE0821 ⚠(2)	✓	✓(6)	✓	✓	✓, max 1.8V	✓	✓	✓ (3x PL, 3x PS)	✓	✓
TE0823 ⚠(2)	✓	✓(6)	✓	✓, max 1.8 V	✓, max 1.8V	✓, max 1.8 V	✓	✓ (3x PL, 3x PS)	✓	✓
TE0841 ⚠(2)(3)	✗	✗, MGTs	✗	✓	✓, max 1.8V	✓, max 1.8 V	✓	✓ (3x PL, 3x PS)	✓	✓

- (2) HP IO Banks only support 1.8V
- (3) MGT's Lanes connected to SD-Level shifter: TEB0707 - Leave J4 open.
- (4) MGT's Lanes connected to SD-Level shifter, but module side 1.8V is not connected.
- (6) Select correct SDIO voltage by jumper.
- (15) Fix 3.3V signals of CRUVI HS connectors are connected to MAX10 CPLD and can be used firmware dependent (In standard firmware not implemented).
- (16) Signals on CRUVI LS connector are connected to MAX10 CPLD and can be used firmware dependent (In standard firmware 4 input and 4 output).
- (17) LEDs are connected to MAX10 CPLD and can be used firmware dependent (In standard Firmware implemented.)
- (18) Not available on assembly variants with K70T.
- (19) Two diff. pairs connected to FT600 USB3 lanes. Other signals usable.

TEBA0841

	SFP	USB Host	SD Card "J4 2x5 Pin Header (2.54)"	GPIO "J20/J10 each 2x25 Pin Header (2.54)"	XMOD (JTAG/UART) "JX1 2x6 Pin Header (2.54)"	GPIO (JTAG/UART/MGT REFCLK) "J3 2x8 Pin Header (2.54)"
TE0710	✗	✗	★,3.3V B16 I/O	★(9)	✓	★(8)
TE0711	✗	✗, device only (14)	★,1.8V B16 I/O	★(9)	✓	✓, B34 CLK input
TE0712	✓	✗	★, B13 I/O	★(9)	✓	✓, B34 CLK input
TE0713	✓	✗, device only (14)	★, B13 I/O	★(9)	✓	✓
TE0715 ⚠(10)	✓	✓	★(7)	★(9)	✓	✓
TE0715-30 ⚠ (10)	✓	✓	★(7)	★(9)	✓	✓
TE0720 ⚠(10)	✗	✓	★(7)	★(9)	✓	✓, B34 CLK input
TE0741 (11)	✓	✗	✗,MGT's	★(9)	✓	✓
TE0820 ⚠(10)	✓	✓	★(6)	★(9)	✓	✓
TE0821 ⚠(10)	✓	✓	★(6)	★(9)	✓	✓
TE0823 ⚠(10)	✓	✓	★(6)	★(9)	✓	✓
TE0841	✓	✗	✗,MGT's	★(9)	✓	✓

- TEBA0841 has no dedicated power plug connector for 3.3V main power. External Power Supply must be connected to J17, J20, J4 or J3 3.3V Pin. Do not use XMOD for power supply.
- TEBA0841-REV01 VCCIOB and VCCIOC are not connected.
- (6) Works, but without carrier board modification out of specification: TE0706 SD Levelshifter powered fix by 1.8V, TE0820 SD MIO-Bank by 3.3V.
- (7) SD signals only, no SD-Card connector
- (8) CLK not connected on TE0710
- (9) Check schematics or TE Master Pinout Excel Sheet for detailed connection and IO Bank power supply
- (10) With TEBA0841-01 is Boot Mode not selectable, please contact Trenz Electronic Support, if you need a Zynq or ZynqMP Module with TEBA0841-1. With TEBA0841-2 it's usable.
- (11) MGT polarity is swapped

TEF1002

	FMC	FMC Vadj	SFP	SATA	PCIe	USB Host	SD Card	Ethernet	FFA & FFB	USB UART	USB JTAG
TE0710	?, no MGT, 19x diff pair / 38x IO	?	✗	✗	✗	✗	?, 3.3V B16 I/O	?	?	?	?
TE0711	?, VCCIO34 B34 I/O on MGT	?	✗	✗	✗	✗, device only(14)	?, 1.8V B16 I/O	✗, B34 I/Os	?	?	?
TE0712	?	✓	?	?	✓	✗, B14 3.3V I/Os	?, 1.8V B13 I/O	✓	?	✓	✓
TE0713	?	?	?	?	?	✗, device only(14)	?, 1.8V B13 I/O	✗, B13 I/Os	?	?	?
TE0715	?	?	?	?	?	?	?	?	?	?	?
TE0715-30	?	?, Max 1.8V	?	?	?	?	?	?	?	?	?
TE0720 (12)	?, VCCIO34 B34 I/O on MGT	✓	✗	✗	✗	✓	✓	✓	?	✓	✓
TE0741	?	?	?	?	?	✗, B14 3.3V I/Os	✗, MGTs	?, MGTs	?	?	?
TE0820 (13)	✓	★, Max 1.8V	✓	✓	✓	✓	✓	✓	✓	✓	✓
TE0821 (13)	✓	★, Max 1.8V	✓	✓	✓	✓	✓	✓	✓	✓	✓
TE0823 (13)	✓	★, Max 1.8V	✓	✓	✓	✓	✓	✓	✓	✓	✓
TE0841	?	?, Max 1.8V	?	?	?	✗, B65 3.3V I/Os	✗, MGTs	?, MGTs	?	✓	✓

- (12) FMC_VADJ powers VCCIOC connected to power input of Bank 34 VCCO34 on TE0720 needed to start up. In standard Firmware dip S3-2 can be used to switch ON FMC_VADJ without FMC installed.
- (13) FMC_VADJ powers VCCIOC connected to power input of Bank 65 VCCO_65 and VDDO0 of CLK0 on TE0820. In standard Firmware dip S3-2 can be used to switch ON FMC_VADJ without FMC installed. Select VADJ_FMC 1.8V (HP bank)!
- (14) via FTDI FIFO bridge, VBUS Network is default assembled for host usage

TEB2000

	ETH	SD Card	USB Host	Reset	User LEDs	USB UART	Debug UART	USB JTAG
TEM0007	✓	✓	✓	✓	?	✓	✓	✓

3rd Party Carrier

Name	Manufacturer	Product Link	Trenz Shop
EMC^2-DP	Sundance	PC/104 OneBank Carrier for SoC Modules	EMC2-DP
oi110	Sundance	oi110 – Dual CameraLink	---
oi111	Sundance	oi111 – Dual SDI + Analog Video	---
oi115	Sundance	oi115 – HDMI In / Out	---