Zynq Ultrascale+ based modules (MPSoC, RFSoC)

	TE	0803	-	03	-	5	D	I	2	1	-	A	S
	1 2	3456	7	8 9	10	11	12	13	14	15	16	17	18

Module type

TE	Trenz Electronic
AM	Trenz Electronic Andromeda

Module name

0802	0803	0806	0807	0808	0813	0817	0818	0820	0821
0823	0835	0865	0010						

Module Revision

01	PCB Revision 1 (initial)

Device name

1	**2**	**3**	**4**	**5**	**6**	**7**	**9**	**A**	**B**	**D**	**F**	ZU+		
ZU1	*ZU2*	*ZU3*	*ZU4*	*ZU5*	*ZU6*	*ZU7*	*ZU9*	*ZU11*	*ZU15*	*ZU17*	*ZU19*			
K	**M**	**N**	**P**	**J**	**R**	**X**	**Y**	**S**	**T**	**U**	**V**	ZU+ RFSoC		
ZU21	*ZU25*	*ZU27*	*ZU28*	*ZU29*	*ZU39*	*ZU42*	*ZU43*	*ZU46*	*ZU47*	*ZU48*	*ZU49*			

PS and engine type and speed grade

A	**B**	**D**	**F**	**G**	**H**	**K**	**M**	**N**	**P**	**R**	**S**	**T**	***X***	***Y***
CG-1	EG-1	EV-1	CG-2	EG-2	EV-2	CG-3	EG-3	EV-3	CG-1L	EG-1L	EV-1L	CG-2L	*DR-1*	*DR-2*

Temp range (Tstr. abs. = -65°C to +150°C)

XC (Standard-Grade)		XA (Automotive-Grade)		XQ (Defense-Grade)	
Extended (0/+100°C)	Industrial (–40/+100°C)	Automotive (–40/125°C)	Industrial (I)	Industrial	Military
E	**I**	**Q** (R - Obsolete)	**T**	**N**	**M**

DDR memory (TE0803/0807/0808: 4x; TE0820/0821: 2x)

0	Not populated			
1	TE0803/0807/0808: 2 GByte TE0820/0821: 1 GByte	Commercial	4Gbit - NT5AD256M16D4-HR	#29165 (EOL)
2	TE0803/0807/0808/0812/0813/0817/0818: 4 GByte TE0820/0821: 2 GByte TE0865: 4 GByte + ECC (PS) + 4 GByte (PL) AM0010: 4 GByte + ECC TE0806: 4 GByte + ECC (PS) + 2 GByte (PL)	Industrial	8Gbit - K4A8G165WB-BIRC	#28375 (NRND)
3	TE0803/0807/0808: 8 GByte TE0820/0821: 4 GByte	Commercial	16Gbit (2 die) - K4AAG165WB-MCRC0CV	#27787 (EOL)
4	TE0803/0807/0808: 8 GByte TE0865: 8 GByte + ECC (PS) + 8 GByte (PL) TE0820: 4 GByte	Industrial	16Gbit - MT40A1G16RC-062E IT:B	#30258 (EOL)
5	TE0803/0807/0808: 4 GByte TE0820/0821: 2 GByte	Automotive	8Gbit - MT40A512M16JY-083E AAT:B	#30246 (EOL)
6	TE0803/0807/0808: 8 GByte TE0820/0821: 4 GByte	Industrial	16Gbit (2 die) - H5ANAG6NCMR-XNI	#30673 (EOL)
7	TE0813/TE0817/TE0818: 4 GByte TE0806: 4 GByte + ECC (PS) + 2 GByte (PL)	Industrial	8GBit - IS43QR16512A-083TBLI	#30714
8	TE0803/0807/0808/0813/0817/0818: 4 GByte TE0820: 2 GByte	Industrial	8 GBit - K4A8G165WC-BITDTCV	#30211
9	TE0808: 8 GByte	Industrial	16Gbit - MT40A1G16TB-062E IT:F	#32484
U	TE0802/0823: 1 GByte	Industrial	8Gbit - IS43LQ32256A-062BLI (LPDDR4)	#29797
V	TE0802/0823: 1 GByte	Commercial	8Gbit - K4F8E304HB-MGCJ (LPDDR4)	#28217
X	DDR SODIMM Socket			
Y	IC Socket (IC Debug Holder)			

Flash memory (2x for all modules except TE0802)

0	Not populated	-	-	-
1	TE0803/0807/0808/0813/0817/0818/0820/0821/0823/0865: 128MByte	Industrial	512Mbit - MT25QU512ABB8E12-0SIT	#29292

	AM0010: 128MByte			
2	TE0802/TE0803/0807/0808/0820/0821/0823: 64MByte	Industrial	256Mbit - MT25QL256ABA8E12-1SIT	#28856
3	TE0803/0807/0808/0820/0821/0823: 256MByte	Industrial	1Gbit - MT25QU01GBBB8E12-0SIT	#28264
4	TE0803/0807/0808/0820/0821/0823: 512MByte.	Industrial	2Gbit - MT25QU02GCBB8E12-0SIT	#28286
5	TE0803/0807/0808/0820/0821/0823: 64MByte	Automotive	256Mbit - MT25QU256ABA8E12-0AAT	#30245
6	TE0818/TE0830: 128MByte	Extended	512MBit - IS25WP512M-RHLE (not supported)	#29423
7	TE0812: 256MByte	Industrial	1Gbit - MT25QL01GBBB8E12-0SIT	#29992
8	TE0812: 256MByte	Automotive	1Gbit - MT25QL01GBBB8E12-0AUT	#32363
9	TE0812: 128MByte	Industrial	512Mbit - MT25QL512ABB8E12-0SIT	#28934
eMMC (for TE0820/0821/0823)				
-	Not present (for TE0803/07/08/13/17/18)	-	-	-
0	Not populated (for TE0820/0821/0823)	-	-	-
F	TE0820/0821/0823: 8 GByte	Industrial	8GByte - IS21ES08G-JCLI	#29169 (EOL)
G	TE0820/0821/0823: 8 GByte	Commercial	8GByte - KLM8G1GETF-B041	#28669 (NRND)
K	TE0820/0821/0823: 64 GByte	Industrial	64GByte - IS21ES64G-JCLI	#29799
M	TE0820/0821/0823/0865/AM0010: 8 GByte	Industrial	8GByte - SDINBDG4-8G-XI2	#31133
N	TE0821: 32GByte; TE0812: 2x 32 GByte	Industrial	32GByte - SDINBDG4-32G-XI2	#31139
P	TE0820/0821/0823/AM0010: 64 GByte	Industrial	64GByte - SDINBDG4-64G-XI2	#31140
R	TE0806: 8 GByte	Industrial	8GByte - IS21ES08GA-JCLI	#33145
S	TE0821: 16 GByte	Industrial	16GByte - SDINBDG4-16G-XI2	#31138

Other options (Connectors, custom options)

Module	Variation	Description
All	**A**	Standard assembly variant
	L	Low profile connector height
	C	Standard connector height, FPGA: XCZUxxx-xxxxxxxxx4524 (without encryption)
	D	Low profile connector height, FPGA: XCZUxxx-xxxxxxxxx4524 (without encryption)
	E	Si5345A-D-GM PLL instead of Si5345A-B-GM
	F	Low profile B2B connectors and Si5345A-D-GM PLL instead of Si5345A-B-GM
	...	Custom assembly variant, look additional table below

Additional options

Blank	No extra options
S	Starter Kit
K	With heat spreader
P	Prototype
Z	DCDC converter MUN3CAD03-SE instead of TPS82085SIL **or** MUN12AD03-SE instead of TPS82130SILR (depending on which regulator is used in the original design)
...	Custom assembly variant, look additional table below

Other assembly variations (position 17)

Module	Variation	Description
TE0803	A	Standard profile B2B connectors ST5-80-1.50-L-D-P-TR #27220
	L	Low profile B2B connectors ST5-80-1.00-L-D-P-TR #27017
	R	Custom: standard hight connectors, R14 - 487k (PS_1V8 = 3.3V), U6 - SIT8008BI-71-33E-25.000000E, U32 - SiT8008BI-71-33E-33.333333E, U28 DNP, C81 DNP
	C	B2B connectors: standard profile , FPGA: XCZUxxx-xxxxxxxxx4524 modification
	D	B2B connectors: low profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	X	Custom: standard hight connectors, U41 SBAS70-04LT1G
TE0807	A	Standard profile B2B connectors ST5-80-1.50-L-D-P-TR #27220
	L	Low profile B2B connectors ST5-80-1.00-L-D-P-TR #27017

	C	B2B connectors: standard profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	D	B2B connectors: low profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	X	B2B connectors: standard profile, U41 SBAS70-04LT1G
	E	Si5345A-D-GM PLL instead of Si5345A-B-GM (PLL firmware is incompatible)
	F	Low profile B2B connectors ST5-80-1.00-L-D-P-TR #27017, Si5345A-D-GM PLL instead of Si5345A-B-GM (PLL firmware is incompatible)
TE0808	A	Standard profile B2B connectors ST5-80-1.50-L-D-P-TR #27220
	L	Low profile B2B connectors ST5-80-1.00-L-D-P-TR #27017
	C	B2B connectors: standard profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	D	B2B connectors: low profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	X	B2B connectors: standard profile, U41 SBAS70-04LT1G
	E	U5 – Si5345A-D-GM PLL instead of Si5345A-B-GM (PLL firmware is incompatible)
	F	Low profile B2B connectors ST5-80-1.00-L-D-P-TR #27017, Si5345A-D-GM PLL instead of Si5345A-B-GM (PLL firmware is incompatible)
	O	U26 – 32605 NCV8720BMT120TBG LDO instead of 27103 TPS72012DRV
	N	U26 – 32605 NCV8720BMT120TBG LDO instead of 27103 TPS72012DRV and U5 – Si5345A-D-GM PLL instead of Si5345A-B-GM (PLL firmware is incompatible)
TE0812	A	Space grade model
	B	Test model
TE0817	E	Si5345A-D-GM PLL instead of Si5345A-B-GM (PLL firmware is incompatible)
TE0818	E	Si5345A-D-GM PLL instead of Si5345A-B-GM (PLL firmware is incompatible)
TE0820	A	Standard profile B2B connectors LSHM-150-04.0-L-DV-A-S-K-TR #23838/LSHM-130-04.0-L-DV-A-S-K-TR #24903
	L	Low profile B2B connectors LSHM-150-02.5-L-DV-A-S-K-TR #23836/LSHM-130-02.5-L-DV-A-S-K-TR #26125
	C	B2B connectors: standard profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	D	B2B connectors: low profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	I	B2B connectors: standard profile, Ethernet PHY U8 - 88E1512-A0-NNP2I000 DNP, no screws/spacers
TE0821	A	Standard profile B2B connectors LSHM-150-04.0-L-DV-A-S-K-TR #23838/LSHM-130-04.0-L-DV-A-S-K-TR #24903
	C	Standard profile B2B connectors, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	D	B2B connectors: low profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	L	Low profile B2B connectors LSHM-150-02.5-L-DV-A-S-K-TR #23836/LSHM-130-02.5-L-DV-A-S-K-TR #26125
TE0823	A	Standard profile B2B connectors LSHM-150-04.0-L-DV-A-S-K-TR #23838/LSHM-130-04.0-L-DV-A-S-K-TR #24903, HyperFlash/HyperRAM DNP
	C	Standard profile B2B connectors, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	D	B2B connectors: low profile, FPGA: XCZUxxx-xxxxxxxxx4524 modification
	L	Low profile B2B connectors LSHM-150-02.5-L-DV-A-S-K-TR #23836/LSHM-130-02.5-L-DV-A-S-K-TR #26125
TE0830	A	Standard assembly option PICMG ASP connectors
TE0850	A	Standard assembly option

	B	Without FAN
	C	Lanes SATA_R_SL, SATA_R_SCL disconnected from J1. Clock CK (U14/U73) connected to J1
TEB0911	A	Standard assembly option

Other assembly variations (position 18)

Module	Variation	Description
TE0820	J	Without screws, spacers