

Product Name: ZX182M FMC Vita 57.1 Agilent Tektronix Mictor connector probe test board - breakout adapter
 passive FPGA Mezzanine Card
Agilent - Mictor probes : E5346A E5380A E5381A E5382A
TekTronix – Mictor Probe P6434

Product Description: FPGA Mezzanine card , FMC , passive breakout adapter, meeting VITA 57.1 standard bus interfacing with Agilent and Tektronix Mictor or flying leads differential / single ended probes. Includes 10 rows x 40 pins, totaling **400** pins High Pin Count, HPC, (**200** pins for LPC – Low Pin Count), FCI Meg-Array, housing both CC (Carrier Card - Host) and MC (Mezzanine Card) connectors.

ZX182M is offered in HPC, LPC and FCI Meg-Array connector configuration, see ordering information

Fully compatible with 10 rows x 40 pins single ended or differential pairs design configuration

- All signals are accessible via designated probe's connector, IPEX, Header, and 0402 SMD package.
- All Clocks are accessible via IPEX-37 connectors
- JTAG signals accessible via 2x4 pin header
- All Power Supply signals accessible via 2x4 pin headers with on-board LEDs indicators.
- Improved signal integrity and crosstalk with **12 layers PCB** with each layers guarded by GROUND plane.
- Designed for **50Ω** single ended and **100Ω** differential trace impedance exceeding VITA 57.1 standard.
- DC to 10GHz bandwidth applications

GND test point for easy access as well as applying external ground reference

Application: FMC VITA 57.1 daughter card Bringup, testing, emulation, Xilinx development Virtex 6 Virtex 7 interface testing daughter board to host, modular design evaluations

Access: 2x4 pin header, SMD 0402 Package footprint as well as P68xx designated connectors

Pitch: 1.27mm (0.05") High Speed connector

Mates with : Xilinx FPGA development systems Virtex 6 Virtex 7 connecting daughter board to Host
 Any and all FMC VITA 57.1 compliant design CC-LPC-xxx CC-HPC-xxx MC-HPC-xxx MC-LPC-xxx
 where xxx is 10L, 10, 8.5L 8.5

Samtec Molex HI-SPEED HI-DENSITY SEARRAY design connectors.
 SEAM SADL SEAMP SEAR SEAMI SEAC FMC HPC LCP
 SEAF-040-08.0-L-10-2-A SEAF-040-08-L-10-2-A
 SEAFP-40 SEAMP-040 SEAMI-040 SEAR-040-10-10- SEAM-040
 All listed Samtec Molex FMC connectors listed, table below:

ZX18x FMC breakout adapter mates with the following Samtec Molex CC / MC SEARAY™ VITA 57.1 Connectors

Molex PN	Samtec PN	VITA PN	Description	Mated Stack Height
45971-4307	ASP-127796-01*	CC-LPC-10L	female	
45971-4317	ASP-134485-01*	CC-HPC-10L	female	
45971-4315	ASP-134486-01	CC-HPC-10	female	
45971-4305	ASP-134603-01	CC-LPC-10	female	
45970-4117	ASP-134601-01*	MC-HPC-8.5L	male	8.5 mm
45970-4115	ASP-134602-01	MC-HPC-8.5	male	8.5 mm
45970-4107	ASP-134605-01*	MC-LPC-8.5L	male	8.5 mm
45970-4105	ASP-134606-01	MC-LPC-8.5	male	8.5 mm
45970-4307	ASP-127797-01	MC-LPC-10L	male	10 mm
45970-4317	ASP-134487-01	MC-HPC-10L	male	10 mm
45970-4315	ASP-134488-01	MC-HPC-10	male	10 mm
45970-4305	ASP-134604-01	MC-LPC-10	male	10 mm

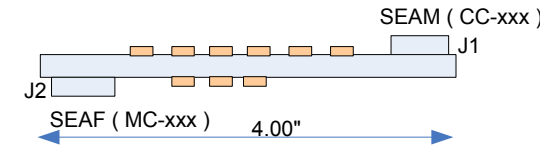
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ZX182M Block diagram, See Page 2

ZX182M , Passive FMC VITAL 57.1 breakout adapter – test board



CC: Carrier Card typically located on Host
 MC: Mezzanine Card, typically located on Mezzanine Card
 SEAF: SEARRAY Female connector
 SEAM: SEARRAY Plug (Male) connector

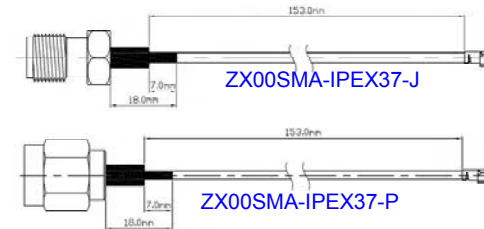
Probe connector, headers, IPEX-37 access points

ZX182MD-X-X Package includes:

Part number	Quantity	Description
ZX182M-X-X	1	FMC Mezzanine Module
ZX00SMA-IPEX37-X	4	SMA to IPEX-37 cable assembly , Note 1, See ordering information

Notes:

1- Used for measuring or supplying external Clocks.



ZX182M-F-X Mates with any and all FMC VITA 57.1 compliant design using FCI Meg-Array 400 pins design. Meg-Array 10 rows x 40 pins FPGA Mezzanine Card (daughter)

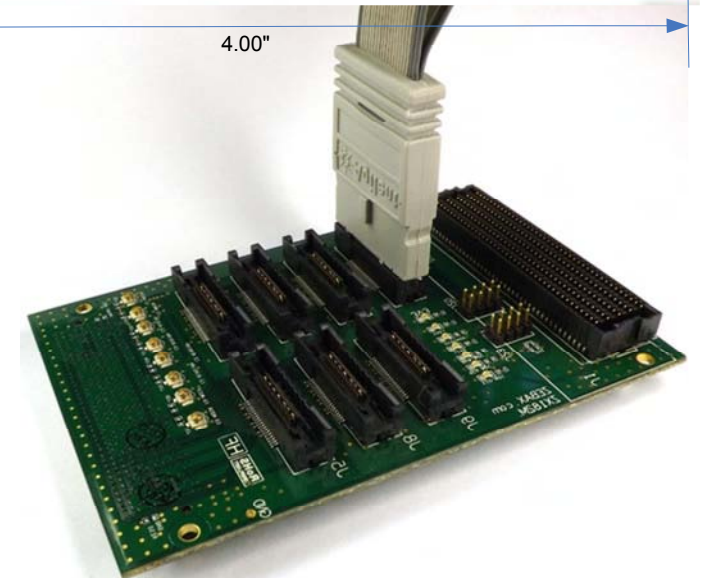
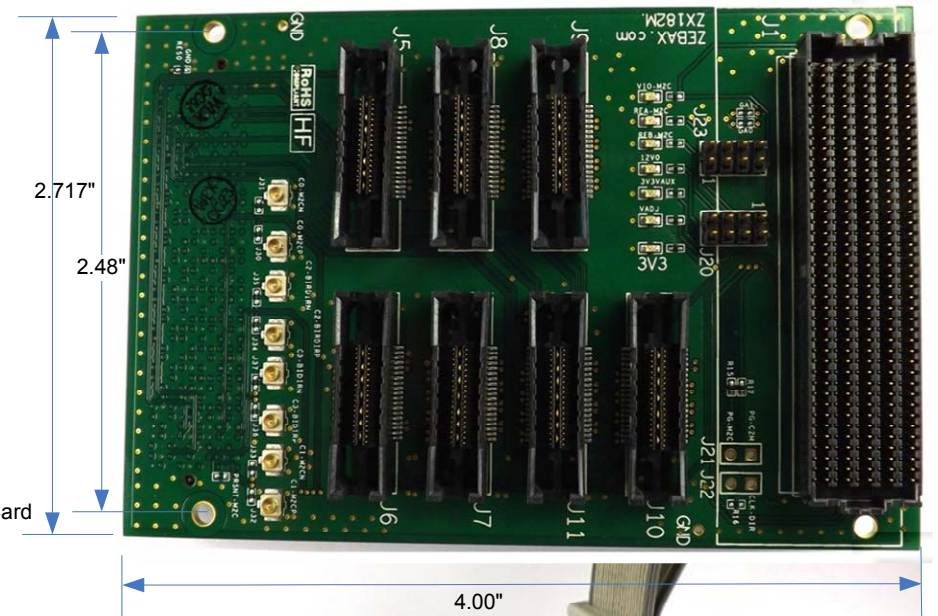
Mated Stack Height: 4mm 6mm 8mm 10mm 12mm 14mm
 Meets Telcordia GR-1217-CORE and NPS25298-2 Specifications

FCI ZX18x-F-X FCI Meg-Array 10rows x 40 pins FMC breakout adapter mates with the following FCI Meg-Array VITA 57.1 Connectors

Plug (CC)		Receptacle (MC)		
84520-002LF	84740-002LF	74221-001LF	74388-001LF	74390-001LF*
84520-101LF	84740-102LF	74221-101LF	74388-101LF	74390-101LF
84520-202LF*	84740-202LF	74221-201LF	74388-201LF	74390-201LF
84520-092LF	84740-092LF	74221-091LF	74388-091LF	74390-091LF
84520-192LF	84740-192LF	74221-191LF	74388-191LF	74390-191LF
84520-292LF	84740-292LF	74221-291LF	74388-291LF	74390-201LF
6mm Plug	0mm Plug	4mm	6mm	8mm

* Used on ZX182P-F-X

LF : Lead Free



Ordering INFO:

Part Number	options
ZX182M-X-X	J : SMA Jack (Standard) P : SMA Plug connector
	H : HPC - High Pin Count connector L : LPC - Low Pin Count connector F : FCI - FCI Meg-Array connector

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	ITEM: ZX182M

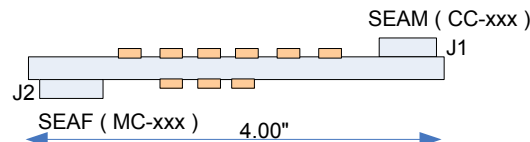
DESCRIPTION: FMC VITA 57.1 test board Agilent Tektronix Mictor or Flying Leads probe – passive mezzanine

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		SHEET: 1 OF 3

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ZX182D , Passive FMC VITAL 57.1 breakout adapter – test board



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 MC: Mezzanine Card, typically located on Mezzanine Card
 SEAF: SEARRAY Female connector
 SEAM: SEARRAY Plug (Male) connector
 Probe connector, headers, IPEX-37 access points

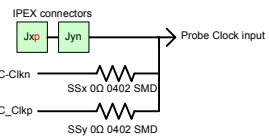
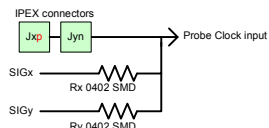
Typical SS signal connection using 0402 SMD Package

Break signal path:

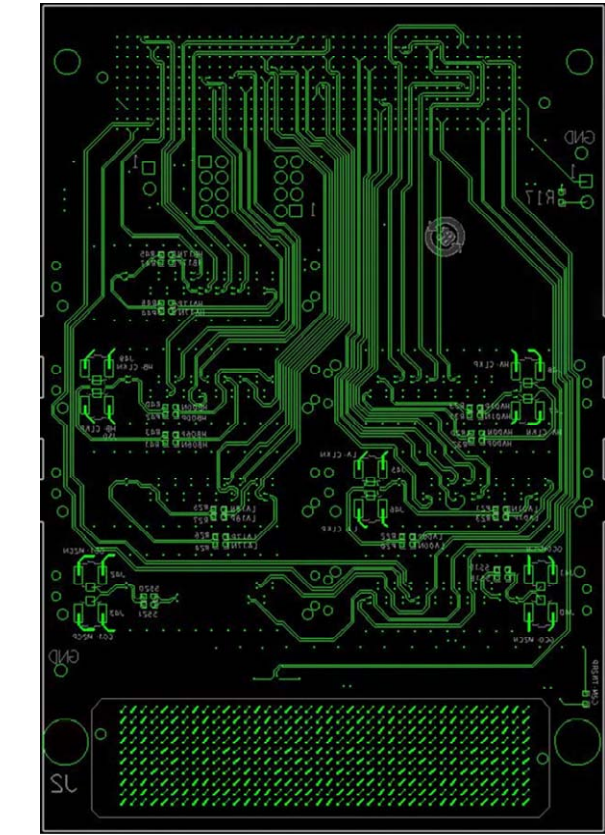
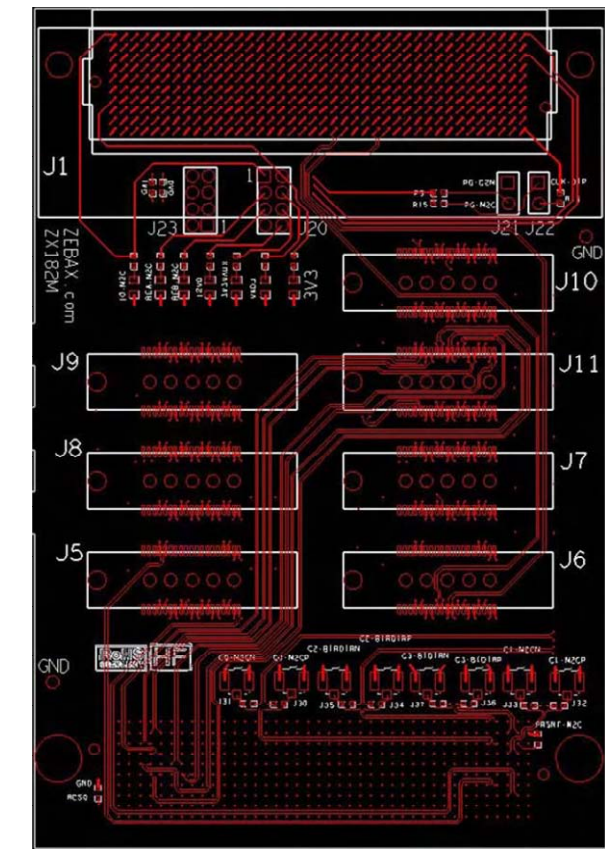
Clock routing technique

Probe clocks are routed using IPEX connectors for use with external clock sources as well as optional resistor stuffing as exhibited below. Jxp, Jxn are IPEX positive and negative IPEX connectors. The Rx, Ry (0402 SMD package) are not stuffed as default. SIGx, SIGy are defined signals reserved as probe clock option, if available. Please see Probe signal assignment table for assigned IPEX and availability of SIGx, SIGy per designed probe access.

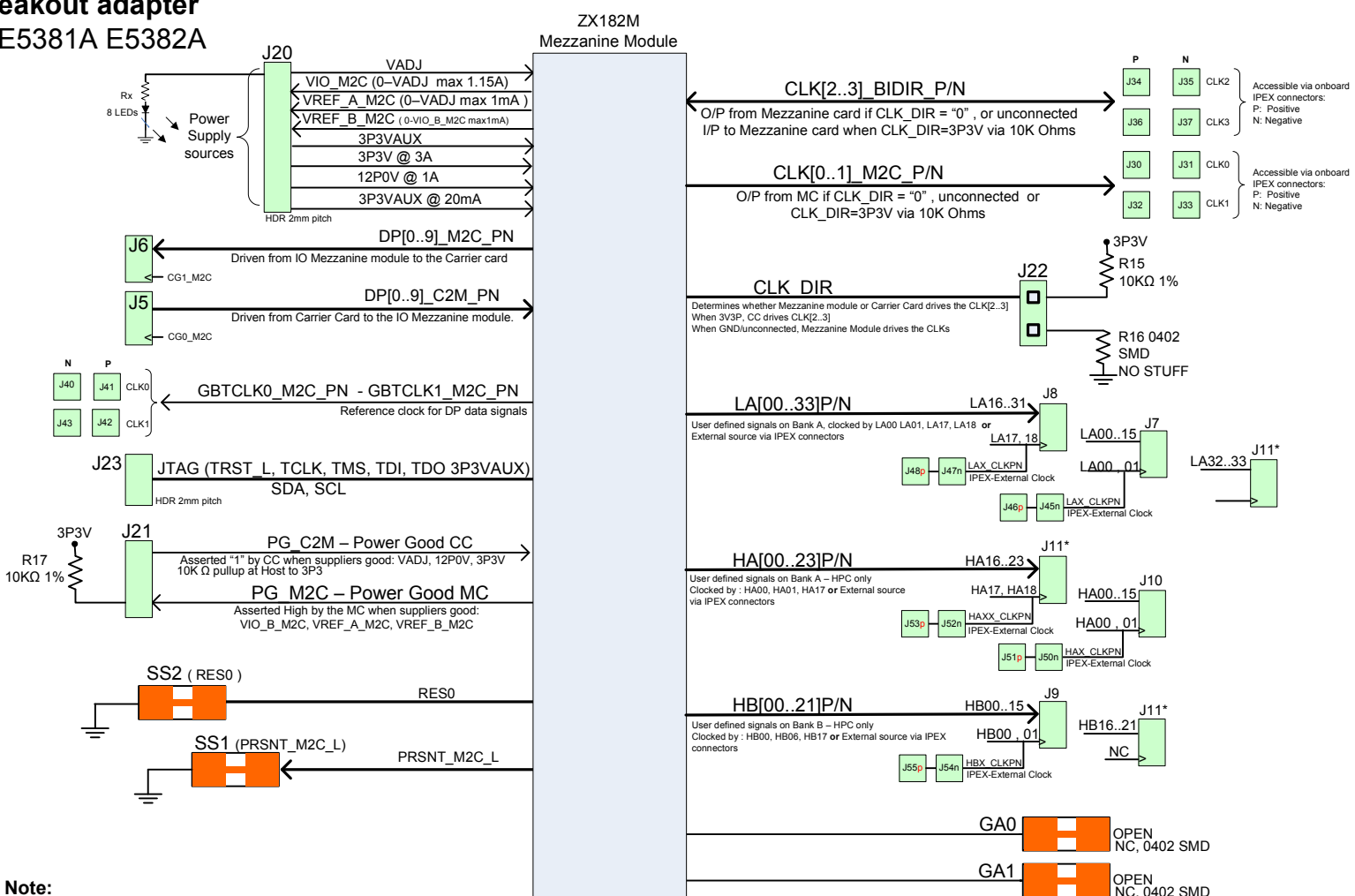
MC clock source routing to probes are accessible at IPEX connectors. SS (0402 SMD package) can be used to disconnect MC from providing the Clock or install appropriate filtering, if applicable.



ZX104x (from Zebax) products complement ZX182M providing flying leads interface to any scope or Logic Analyzer.



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		SHEET: 2 OF 3

Probe signal map: Below are signal and clock mapping for the designated probe connectors

J5					
Assigned	Pin	Signal	Signal	Pin	Assigned
NC	1	NC		2	NC
NC	3	NC		4	NC
NC	5	CLK0	CLK1	6	NC
DP7-C2M-N	7	D15	D15	8	GBTCLK0-M2C-N J40 - SS18
DP7-C2M-P	9	D14	D14	10	GBTCLK0-M2C-P J41 - SS19
DP6-C2M-N	11	D13	D13	12	
DP6-C2M-P	13	D12	D12	14	
DP5-C2M-N	15	D11	D11	16	
DP5-C2M-P	17	D10	D10	18	
DP4-C2M-N	19	D9	D9	20	
DP4-C2M-P	21	D8	D8	22	
DP3-C2M-N	23	D7	D7	24	
DP3-C2M-P	25	D6	D6	26	
DP2-C2M-N	27	D5	D5	28	
DP2-C2M-P	29	D4	D4	30	
DP1-C2M-N	31	D3	D3	32	DP9-C2M-N
DP1-C2M-P	33	D2	D2	34	DP9-C2M-P
DP0-C2M-N	35	D1	D1	36	DP8-C2M-N
DP0-C2M-P	37	D0	D0	38	DP8-C2M-P
GND(Center Tab)					

J8					
Assigned	Pin	Signal	Signal	Pin	Assigned
NC	1	NC		2	NC
NC	3	NC		4	NC
NC	5	CLK0	CLK1	6	NC
LA23-N	7	D15	D15	8	LA31-N
LA23-P	9	D14	D14	10	LA31-P
LA22-N	11	D13	D13	12	LA30-N
LA22-P	13	D12	D12	14	LA30-P
LA21-N	15	D11	D11	16	LA29-N
LA21-P	17	D10	D10	18	LA29-P
LA20-N	19	D9	D9	20	LA28-N
LA20-P	21	D8	D8	22	LA28-P
LA19-N	23	D7	D7	24	LA27-N
LA19-P	25	D6	D6	26	LA27-P
LA18-N	27	D5	D5	28	LA26-N
LA18-P	29	D4	D4	30	LA26-P
LA17-N	31	D3	D3	32	LA25-N
LA17-P	33	D2	D2	34	LA25-P
LA16-N	35	D1	D1	36	LA24-N
LA16-P	37	D0	D0	38	LA24-P
GND(Center Tab)					

External IPEX J47, J48 feeds LA17-NP via R24/R26 or LA18-NP via R25/R27

J9					
Assigned	Pin	Signal	Signal	Pin	Assigned
NC	1	NC		2	NC
NC	3	NC		4	NC
NC	5	CLK0	CLK1	6	NC
HB07-N	7	D15	D15	8	HB15-N
HB07-P	9	D14	D14	10	HB15-P
HB06-N	11	D13	D13	12	HB14-N
HB06-P	13	D12	D12	14	HB14-P
HB05-N	15	D11	D11	16	HB13-N
HB05-P	17	D10	D10	18	HB13-P
HB04-N	19	D9	D9	20	HB12-N
HB04-P	21	D8	D8	22	HB12-P
HB03-N	23	D7	D7	24	HB11-N
HB03-P	25	D6	D6	26	HB11-P
HB02-N	27	D5	D5	28	HB10-N
HB02-P	29	D4	D4	30	HB10-P
HB01-N	31	D3	D3	32	HB09-N
HB01-P	33	D2	D2	34	HB09-P
HB00-N	35	D1	D1	36	HB08-N
HB00-P	37	D0	D0	38	HB08-P
GND(Center Tab)					

External IPEX J54, J55 feeds HA00-NP via R39/R40 or HA06-NP via R39/R41

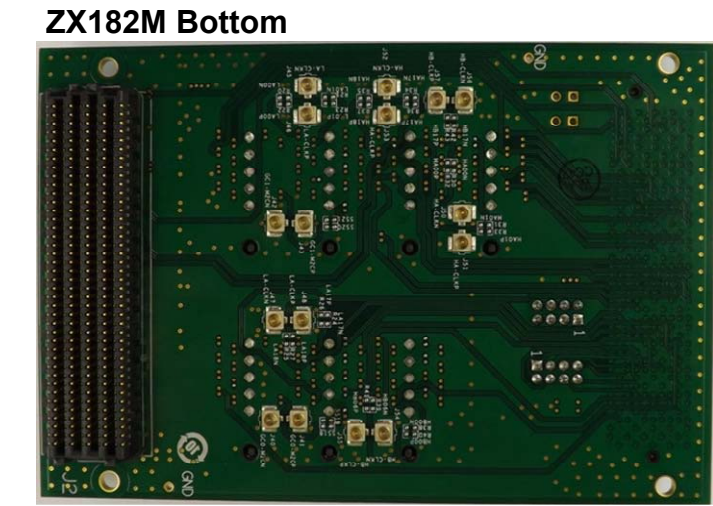
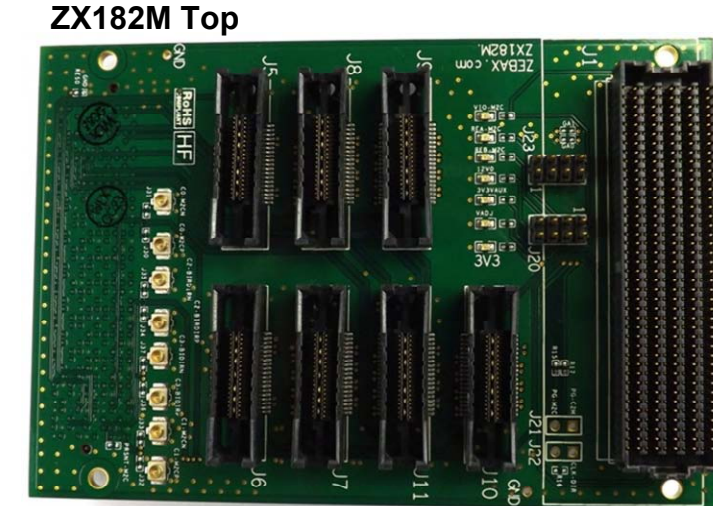
Vita57.1 Power Supply rails				
Voltage supply	Voltage	Max. Current HPC (LPC)	Description	
VADJ	0- 3.3V	4A (2A)	Adjustable supply voltage from CC to the IO MC module.	
VIO-B-M2C	0 - VADJ	1.15 (NA)	Supplied voltage generated by MC powering the IO banks on the FPGA interfacing to the Bank B IO pins of the connector	
VREF-A-M2C	0 - VADJ	1mA*	Referenced voltage used by the bank A data pins, LAxx, HAxx. No Connect if Bank A reference voltage is not required.	
VREF-B-M2C	0- VIO-B-M2C	1mA (NA)*	Reference voltage used by the bank B data pins, HBxx. No Connect if Bank A reference voltage is not required.	
3P3VAUX	3.3V	20mA*	Auxiliary power supply from CC to the IO MC module.	
3P3	3.3V	3A	Power supply from CC to the IO MC module.	
12P0V	12.0V	1A	Power supply from CC to the IO MC module.	

NA: Not available for LPC connector CC: Carrier Card (Host) MC: Mezzanine Card
 * Due to supply rail's max. current limitation, the onboard LED indicator is populated but the current limiting resistor is NOT populated.

J6					
Assigned	Pin	Signal	Signal	Pin	Assigned
NC	1	NC		2	NC
NC	3	NC		4	NC
NC	5	CLK0	CLK1	6	NC
DP7-M2C-N	7	D15	D15	8	GBTCLK1-M2C-N J42 - SS20
DP7-M2C-P	9	D14	D14	10	GBTCLK1-M2C-P J43 - SS21
DP6-M2C-N	11	D13	D13	12	
DP6-M2C-P	13	D12	D12	14	
DP5-M2C-N	15	D11	D11	16	
DP5-M2C-P	17	D10	D10	18	
DP4-M2C-N	19	D9	D9	20	
DP4-M2C-P	21	D8	D8	22	
DP3-M2C-N	23	D7	D7	24	
DP3-M2C-P	25	D6	D6	26	
DP2-M2C-N	27	D5	D5	28	
DP2-M2C-P	29	D4	D4	30	
DP1-M2C-N	31	D3	D3	32	DP9-M2C-N
DP1-M2C-P	33	D2	D2	34	DP9-M2C-P
DP0-M2C-N	35	D1	D1	36	DP8-M2C-N
DP0-M2C-P	37	D0	D0	38	DP8-M2C-P
GND(Center Tab)					

J10					
Assigned	Pin	Signal	Signal	Pin	Assigned
NC	1	NC		2	NC
NC	3	NC		4	NC
NC	5	CLK0	CLK1	6	NC
HA07-N	7	D15	D15	8	HA15-N
HA07-P	9	D14	D14	10	HA15-P
HA06-N	11	D13	D13	12	HA14-N
HA06-P	13	D12	D12	14	HA14-P
HA05-N	15	D11	D11	16	HA13-N
HA05-P	17	D10	D10	18	HA13-P
HA04-N	19	D9	D9	20	HA12-N
HA04-P	21	D8	D8	22	HA12-P
HA03-N	23	D7	D7	24	HA11-N
HA03-P	25	D6	D6	26	HA11-P
HA02-N	27	D5	D5	28	HA10-N
HA02-P	29	D4	D4	30	HA10-P
HA01-N	31	D3	D3	32	HA09-N
HA01-P	33	D2	D2	34	HA09-P
HA00-N	35	D1	D1	36	HA08-N
HA00-P	37	D0	D0	38	HA08-P
GND(Center Tab)					

External IPEX J50, J51 feeds HA00-NP via R30/R32 or LA01-NP via R31/R33



J20				
Assigned	Pin	Pin	Assigned	
VIO-B-M2C	1	2	3P3	
VREF-A-M2C	3	4	VADJ	
VREF-B-M2C	5	6	3P3VAUX	
GND	7	8	12P0V	

J23				
Assigned	Pin	Pin	Assigned	
TDI	1	2	TDO	
3P3VAUX	3	4	TCK	
12C-SCL	5	6	TRST-L	
12C-SDA	7	8	TMS	

J21				
Assigned	Pin	Pin	Assigned	
PG-C2M	1	2	PG-M2C*	

* 10 K Ω (R17) pullup resistor to 3P3 supply rail

J22				
Assigned	Pin	Pin	Assigned	
CLK-DIR*	1	2	GND via R16	

* 10 K Ω Pullup resistor R15 to 3P3 supply rail
 R16 Pull-down resistor is NOT stuffed

NOTES:
 + IPEX connector access to the probe connector. The SSxx (0402 SMD package) enables MC Signal source. The SSxx Can be replaced by bead, ac coupling cap or filter.

++ Probe clock can be supplied from listed source, IPEX connector (if Jxx is listed) (X - Rx) and (Y-Ry) where X is the signal source followed by the enabled resistor, Rx. The Rx (0 Ω 0402 SMD package) must be installed in order to enable the signal as clock to the probe. Please see "Clock routing technique" section for more details.

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