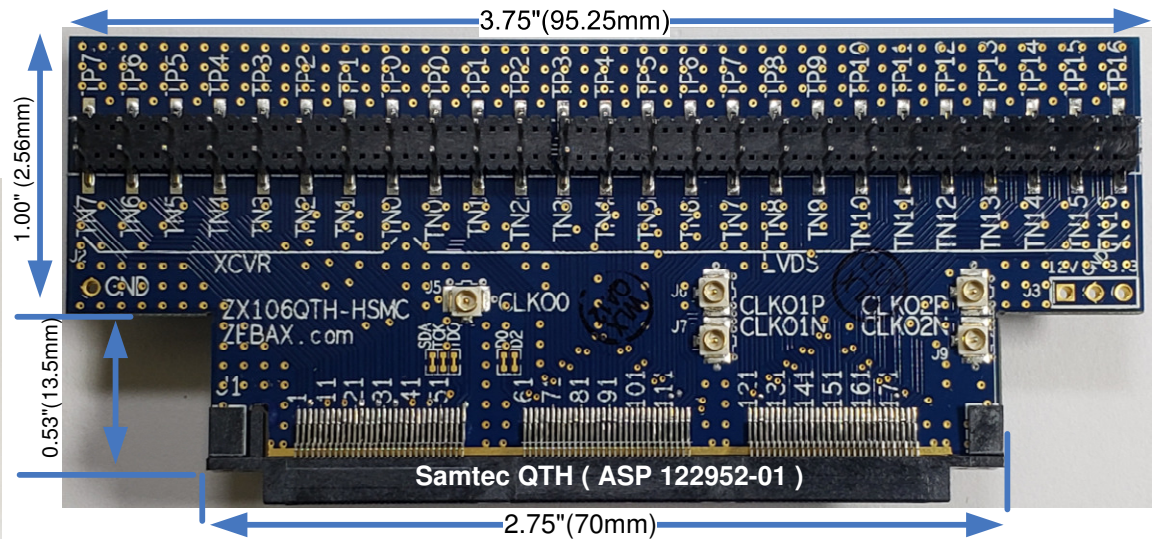
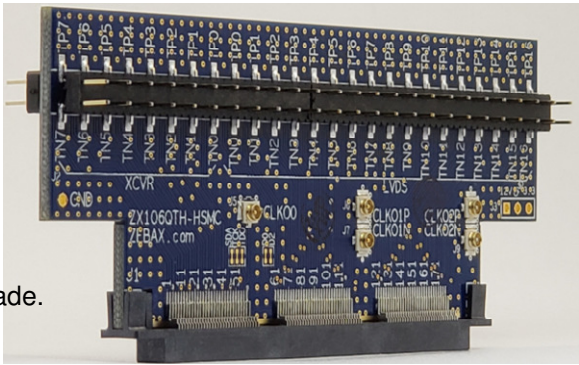


Product Name: ZX106QTH-HSMC Altera High Speed Mezzanine card , HSMC test module - breakout adapter

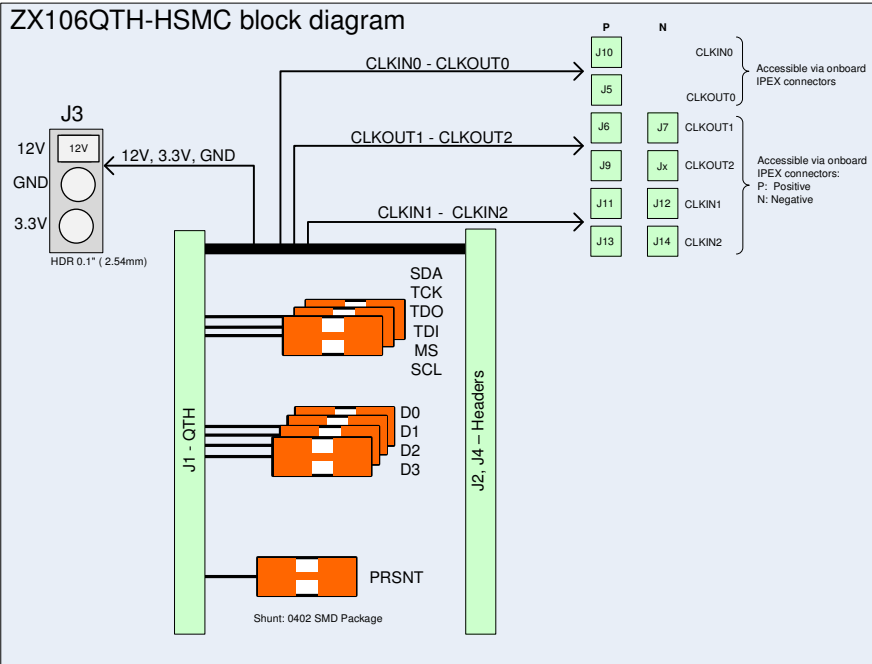
Product Description: Altera HSMC mezzanine card breakout adapter is designed for the HSMC bus interface testing.
ZX106QTH-HSMC provides full access to ALL Altera High Speed Mezzanine, HSMC, differential signal pairs & single -ended signals

- 1- Onboard Samtec QTH (ASP-122953-01) connector interfacing with Altera HSMC platform.
- 2- Onboard headers interfacing with differential or any standard scope probe, see **page 3** for signal assignments.
- 3-All clocks are accessible via onboard IPEX connectors.
- 4- D0..D3, PRSNTn and all JTAG signals are accessible via onboard Shunts (0402 SMD package)
- 5- Accessible +12V, 3.3V and GND signals via onboard 3 pin connector, J3 see **page 2** for details.
- 6- All traces are 50 Ohms impedance controlled.
- 7- 4 layers PCB design, inner layers are GND planes.
- 8- Accessible GND test point, The test point is connected to GND planes and direct interface to the QTH's GND blade.
- 9- Ease of interface with single channel and differential scope probes.
- 10- Mates with any height and form factor QSH-090 & ASP-122953-01- connectors series.
- 11- ZX106QTH-HSMC includes 2pc of IPEX to SMA cable assemblies. See ordering information



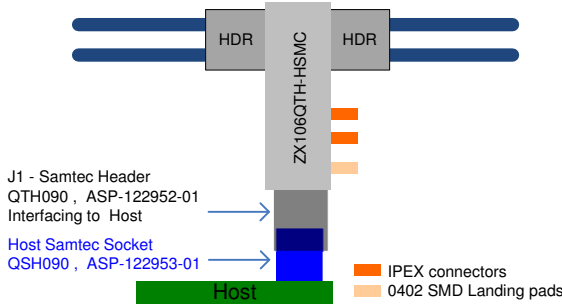
Electrical:

Insertion loss > -2dB @3GHz
Trace impedance: 50 Ω
Operating Temperature: -55°C to +125°C
Samtec Connector:
Onboard Connector: QTH-090 (ASP-122953-01) 2rows x 90pins/row
Mates with: Any QSH-090-xx , ASP-122953-01
Pitch: 0.0197" (0.50mm) pin to pin pitch
Plating: Gold Flash
Header:
Pitch: 0.1" (2.54mm) pin to pin pitch
Spacing: 0.15" (4mm)
Pin: Square 0.018" (0.46mm)
Height: 0.157" (4mm)
Plating: Gold Flash
Compatible with differential probe Agilent E5381A or any scope probe
Shunt:
Package: 0402 SMD
IPEX MHF 35u gold plating receptacle



Note:
1- All Clocks are accessible via onboard IPEX connectors.
2- All Altera HSMC signals from Host (J1) are accessible on onboard headers.
3- PRSNTn, I2C, JTAG, D0..D3 signals are accessible via onboard shunts.
4- Designed differentially paired access:
a) XCVR_TX[0..7]P/N – XCVR_RX[0..7]P/N
b) LVDS_TX[0..16]P/N – LVDS_RX[0..16]P/N

ZX106QTH-HSMC cross section diagram



Compliance:

ISO2001 certified
RoHs - Lead Free
EU RoHS2
UL E111594 document
ELV- Vehicle Directive (Directive 2000/EC)
European Union Directive (203/11/EC)
Halogen Free per IEC-61249-2.21 : 2003
RoHs Directive 2011/65/EU
WEEE Directive (2012/12/EU)
Certificate of Compliance for Radioactive substances
Certificate of Compliance for Asbestos
Certificate of Compliance for Ozone Depleting Substances, ODS
Certificate REACH SVHC
Certificate of Compliance RoHS_EN CoC

ZX106QTH-HSMC package includes:

Part number	Quantity	Description
ZX106QTH-HSMC	1	Samtec Breakout Adapter module
ZX00SMA-IPEX37-J/P	2	SMA to IPEX cable assembly
ZX00BC2PH1	0	36AWG Bare Copper wire to pin header wire assembly

ZX00SMA-IPEX37-J/P for ordering the SMA-IPEX cable assembly

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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	ASSEMBLY DRAWING ITEM: ZX106QTH-HSMC
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DESCRIPTION: Altera High Speed Mezzanine Card HSMC breakout adapter test module

CHECKED: M. MARINA	DRAWN: SLAVIK	REVISION: 1.0 SHEET: 1 OF 3
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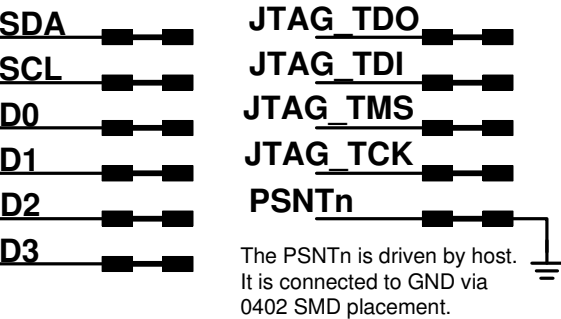
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Product Name: ZX106QTH-HSMC Altera High Speed Mezzanine card , HSMC test module - breakout adapter

Shunt accessible signals: Table below lists the Altera HSMC accessible signals via onboard shunts. The shunts are standard 0402 SMD package where it can be accessed by any scope probe or probing wire with pin header such as ZX00BC2PH1, see ordering information for details.

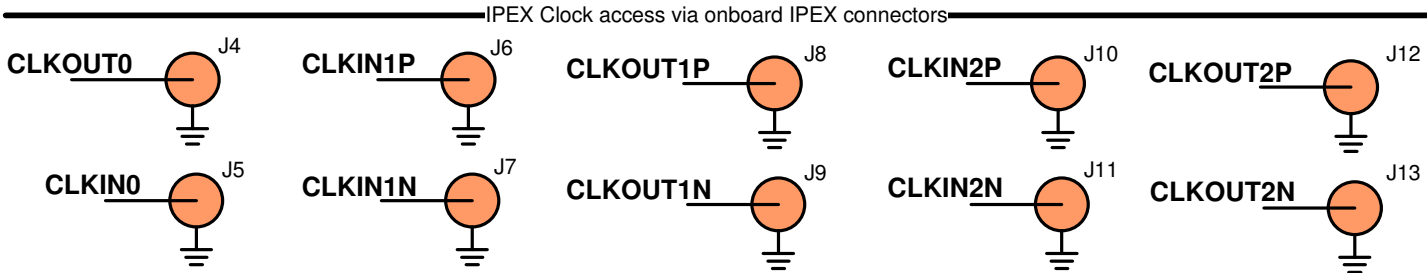


Accessible signals via onboard Shunts



Clocks: All Altera HSMC clocks are routed to onboard IPEX connectors as listed in the Figure below. The Table below lists the cross matrix clocks vs single ended signals for reference.

Cross Matrix Clocks vs Single ended				
Differential	Single		Single	Differential
CLKOUT1P	D36		D37	CLKIN1P
CLKOUT1N	D38		D39	CLKIN1N
CLKOUT2P	D76		D77	CLKIN2P
CLKOUT2N	D78		D79	CLKIN2N



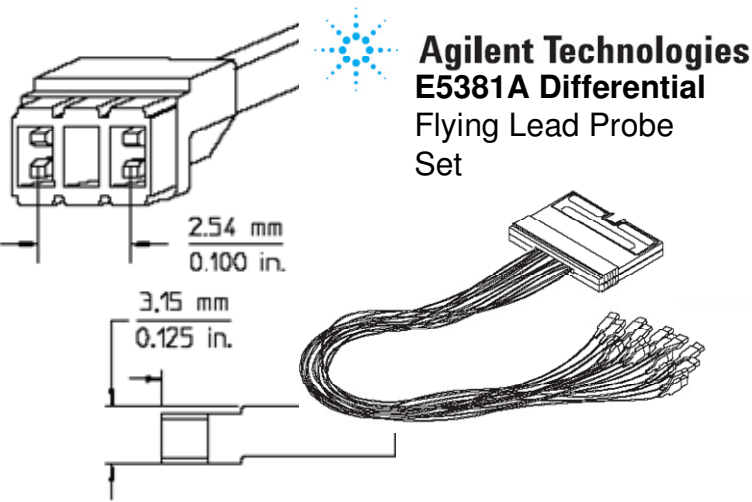
Supply Voltage Connector: J3 connector provides access to Altera HSMC 12V, 3.3 and GND signals. J3 is 0.1" (2.54mm) pitch connector. Table below lists the J3 signal assignments.

J3	
Pin	Assigned
1	12.0V
2	GND
3	3.3V

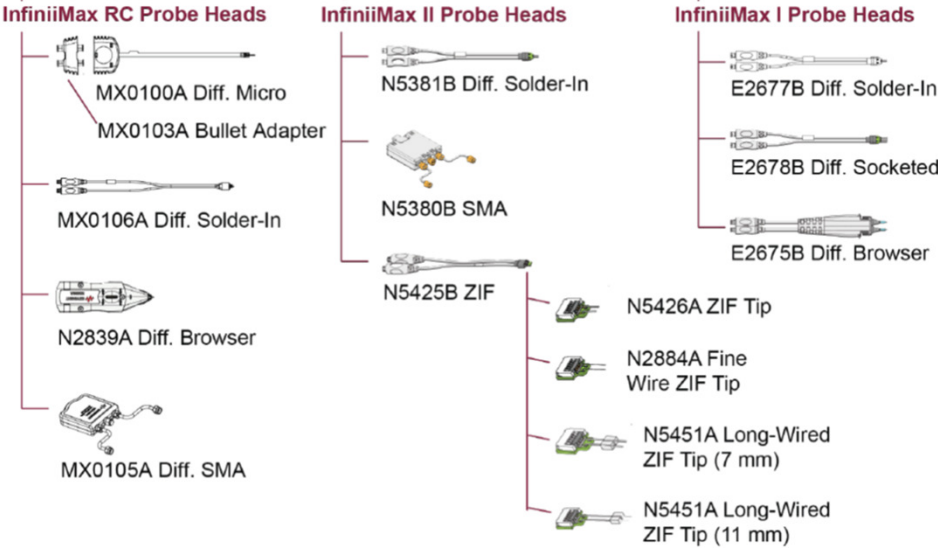
Scope Probe wire Installation: ZX106QTH-HSMC headers are designed for use with both differential as well as single ended probes. Keysight E5381A or similar probes may be sued for testing on ZX106QTH-HSMC breakout adapter.

Keysight as well as Tektronix offer variety of single ended as well as differential probes along with their accessories, below are few probes from each vendor:

- a) Keysight differential probe or similar N2795A, N2796A, 1168V, 1135B along with E2677B differential Solder-in probe, N5426A ZIF Tip, N2884A Fine Wire ZIF Tip and more – See the figure “probe head accessories”.
- b) Tektronix offers several single-ended as well as differential probes such as : P6245, P6248, P6247, P6246 or any of TDP7000 series and more.



Keysight Probe Head assessories



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	ITEM: ZX106QTH-HSMC	
DESCRIPTION: Altera High Speed Mezzanine Card HSMC breakout adapter test module		
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		SHEET: 2 OF 3

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Product Name: ZX106QTH-HSMC Altera High Speed Mezzanine card , HSMC test module - breakout adapter

Signal Assignments: Table below lists the HSMC header’s differential as well as single ended configuration matrix.

ZX106QTH-HSMC pin configuration																												
Bottom	Headers	J2	TN7	TN6	TN5	TN4	TN3	TN2	TN1	D6 TN0	D10 TN1	D14 TN2	D18 TN3	D22 TN4	D26 TN5	D30 TN6	D34 TN7	D42 TN8	D46 TN9	D50 TN10	D54 TN11	D58 TN12	D62 TN13	D66 TN14	D70 TN15	D74 TN16		
			3	7	11	15	19	23	27	31	35	39	43	47	51	55	59	63	67	71	75	79	83	87	91	95		
			1	5	9	13	17	21	25	29	33	37	41	45	49	53	57	61	65	69	73	77	81	85	89	93		
			TP7	TP6	TP5	TP4	TP3	TP2	TP1	TP0	TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8	TP9	TP10	TP11	TP12	TP13	TP14	TP15	TP16		
										D4	D8	D12	D16	D20	D24	D28	D32	D40	D44	D48	D52	D56	D60	D64	D68	D72		
Top	Header	J3	RN7	RN6	RN5	RN4	RN3	RN2	RN1	D7 RN0	D11 RN1	D15 RN2	D19 RN3	D23 RN4	D27 RN5	D31 RN6	D35 RN7	D43 RN8	D47 RN9	D51 RN10	D55 RN11	D59 RN12	D63 RN13	D67 RN14	D71 RN15	D75 RN16		
			4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96		
			2	6	10	14	18	22	26	30	34	38	42	46	50	54	58	62	66	70	74	78	82	86	90	94		
			RP7	RP6	RP5	RP4	RP3	RP2	RP1	RP0	RP1	RP2	RP3	RP4	RP5	RP6	RP7	RP8	RP9	RP10	RP11	RP12	RP13	RP14	RP15	RP16		
										D5	D9	D13	D17	D21	D25	D29	D33	D41	D45	D49	D53	D57	D61	D65	D69	D73		
			XCVR							LVDS																		
Header pin numbers refer to the SAMTEC connector pin number																												
XCVR	RPx		RNx : XCVR_RXPx XCVR_RXNx where x 7..0																									
	TPx		TNx : XCVR_TXPx XCVR_TXNx where x 7..1																									
LVDS	RPx		RNx : LVDS_RXPx LVDS_RXPx where x 16..0																									
	TPx		TNx : LVDS_TXPx LVDS_TXPx where x 16..1																									
Single-Ended Host pin assignments - D0 .. D75																												

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ASSEMBLY DRAWING

ITEM: ZX106QTH-HSMC

DESCRIPTION: Altera High Speed Mezzanine Card HSMC breakout adapter test module

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DRAWN: SLAVIK

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