

Product Name: ZX107HSMC Samtec Breakout Adapter designed for Altera HSMC bus interface

Product Description: Altera HSMC bus interface breakout adapter using Samtec QTH / QSH (ASP-122952-01 and ASP-122953-01). Provides full access to ALL differential / single ended signals via accessible 0402 SMD landing pads. ALL clocks are accessible via onboard IPEX connectors via standard 0402 SMD landing pads stuffing options. The IPEX stuffing options provides support for clock sourcing from Host, Mezzanine card, or external generator/scope for purpose of measurements, stimulus.. The D0 .. D3, PRSNTn signals as well as JTAG signals are accessible via NC (Normally Closed) 0402 SMD landing pads.

- Designed in 6 layers PCBoard with improved signal integrity and crosstalk.
- All traces are designed with 50 Ω Ohms trace impedance. 100 Ω Ohms differential signaling.
- Accessible JTAG, D0, D1, D2, D3, D4 signals via onboard 0402 SMD package footprint.
- 3 Pin header – Accessing +12V, 3.3V and GND planes
- GND test point for direct connection to inner GND planes / fills as well as Samtec connector's center GND stub.

Application: Bringup, testing, emulation, development, modular design evaluations

Mates with : Samtec QSH090 QSH060(DP), QTH090 QTH060(DP). Fully compatible with Altera HSMC standard. Mates wit HSMC Host and Mezzanine, interfacing with HSMC interface ASP-122953-01 and ASP-122952-01

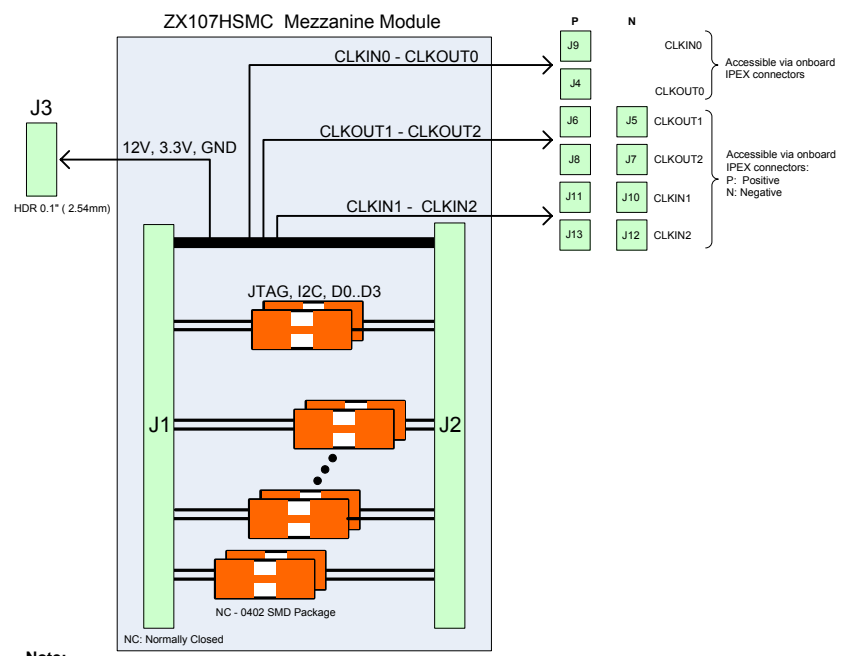
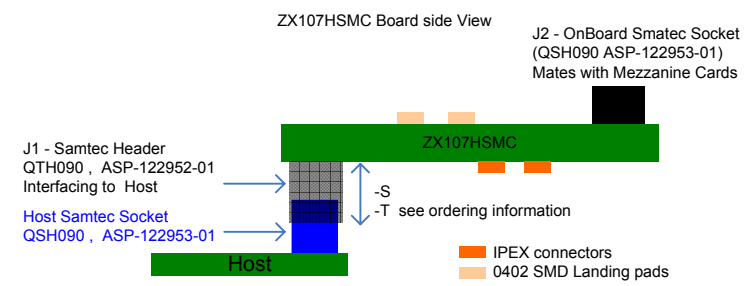
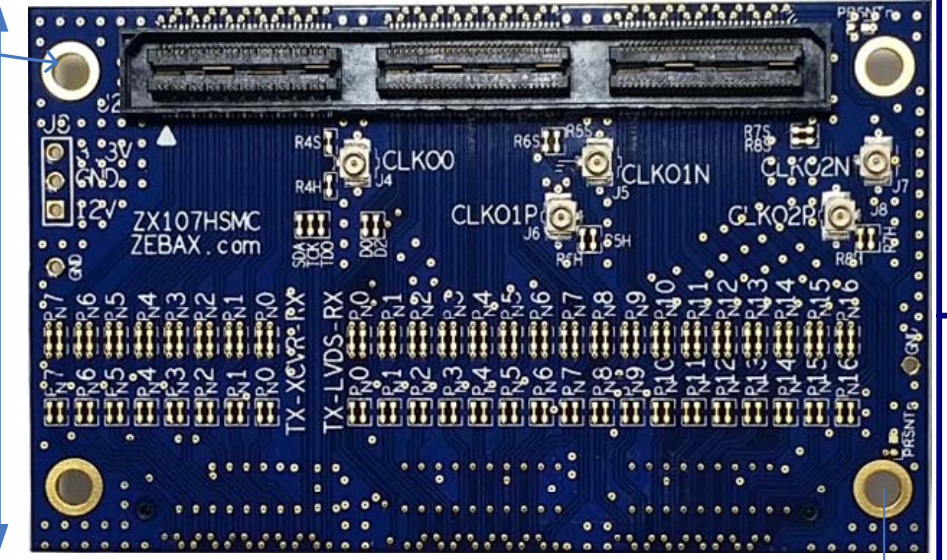
Pitch: 0.50mm (0.0197") High Speed connector

Headers: 0.1" (2.54mm) center, 0.025" SQ with 0.23" (6mm) post height

IPEX: Standard IPEX MHF 35u gold plating receptacle
Compatible with IPEX MHF, MHFII, Wieson , Hirose U.FL
Part Number: 20279-001E on board.
Mates with: MHF, MHF II, or similar – I-PEX part number:
20278-1 20351-1 20311-011 20308-1 20312-011

SEE PAGEs 2 – 3
Page 2 - Clock configurations
Page 3 - Signals listings

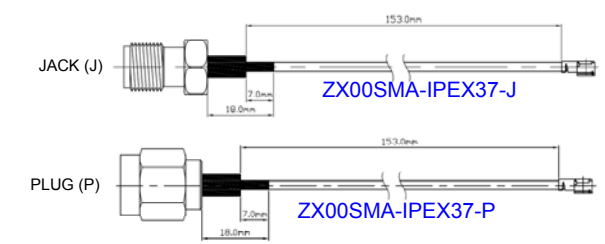
Mounting Holes
0.125" Hole,
0.250" Pad
1.4"
(36mm)



- Note:**
- 1- All Clocks are accessible via onboard IPEX connectors
 - 2- All Altera HSMC signals from Host (J1) are connected to the daughter card connector J2.
 - 3- PRSNTn, I2C, JTAG, D0..D3 signals are accessible via 0402 SMD landing pads.
 - 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

Zebax offers the following cable assemblies complementing the ZX107HSMC:

Part number	Description
ZX00SMA-IPEX37-J	SMA-Jack to IPEX coax cable assembly
ZX00SMA-IPEX37-P	SMA-Plug to IPEX coax cable assembly



ZX107HSMC-X-X Package includes:

Part number	Quantity	Description
ZX107HSMC-X-X	1	HSMC Mezzanine Module
ZX00SMA-IPEX37-X	2	SMA to IPEX-37 cable assembly

Ordering INFO:

Part Number
ZX107HSMC-X-X options

- J : Jack SMA to IPEX cable assembly
- P: Plug SMA to IPEX cable assembly
- S : 0.2861" (7.264mm) height QTH (Standard)
- T: 0.4043" (10.269mm) height QTH

-S & -T options mate with any height QSH connector and ASP-122953-01

Note
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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT		ASSEMBLY DRAWING ITEM: ZX107HSMC-X-X
DESCRIPTION: Samtec breakout adapter QTH QSH 090 Altera HSMC single / differential signaling		
CHECKED: M. MARINA	DRAWN: SLAVIK	REVISION: 1.0 SHEET: 1 OF 3

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Clocks: Clocks configuration of the ZX107HSMC

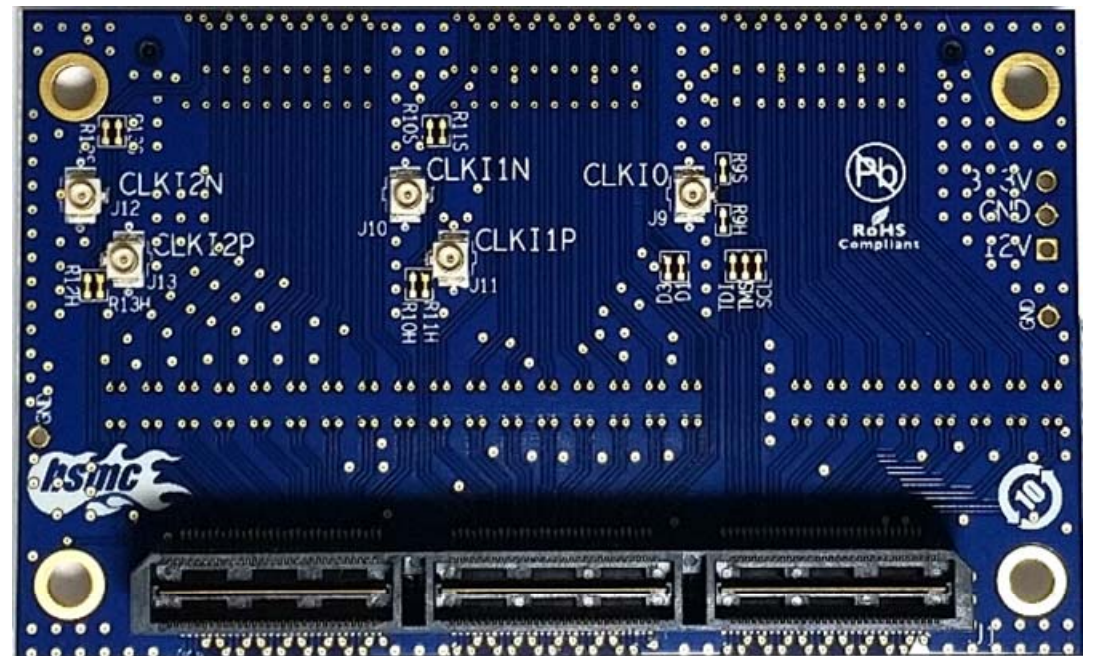
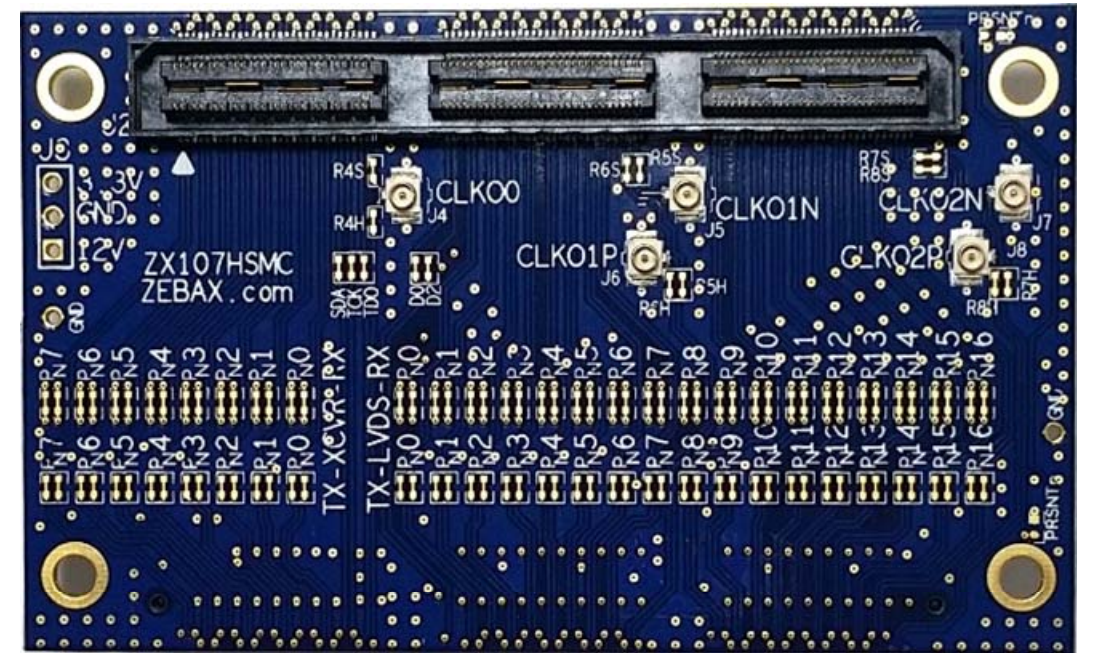
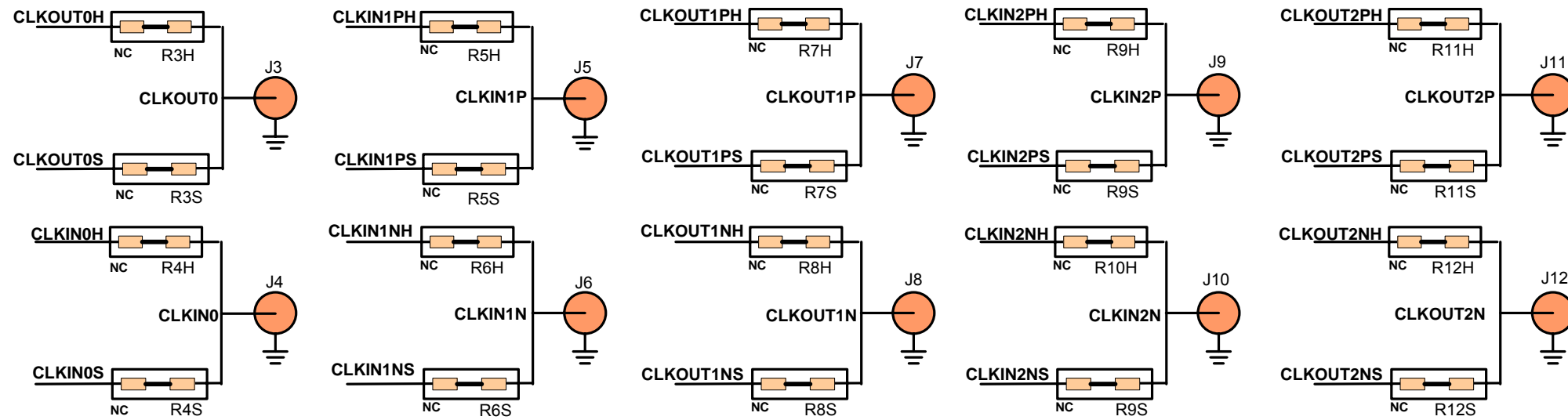
Clocks: CLKINx input to host FPGA x=0, 1, 2 Any Clock name ending with "H" (CLKOUT0H) is connected to Header Samtec Connector, J1.
 CLKOUTx output from host FPGA x=0, 1, 2 Any Clock name ending with "S" (CLKOUT0S) is connected to Socket Samtec Connector, J2.

IPEX clocks are sourced from Host or Mezzanine card (Any clock's name ending with "S" is sourced to/from Mezzanine Card).
 User may provide external stimulus (or scope) by soldering wire to the designated clock's 0402 SMD's landing pad.
 Default connection is Host to/from Mezzanine card – The link can be disconnected by cutting the trace between the 0402 SMD landing pads.
NC: Normally Connect **NO:** Normally OPEN RxH



Typical signal connection:
 0402 SMD Package
 Break signal path:

IPEX Clock assignments



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DESCRIPTION: Samtec breakout adapter QTH QSH 090 Altera HSMC single / differential signaling		
CHECKED: M. MARINA	DRAWN: SLAVIK	REVISION: 1.0
		SHEET: 2 OF 3

Signal listings: Signal listing of the ZX107HSMC is listed in 3 groups:

- 1- TX-XCVR-RX Listing of differential signal pairs
- 2- TX-LVDS-RX Listing of LVDS signal pairs
- 3- Clock vs Single ended - List of the single ended signals associated with the clocks. The clocks are accessible via IPEX connectors.

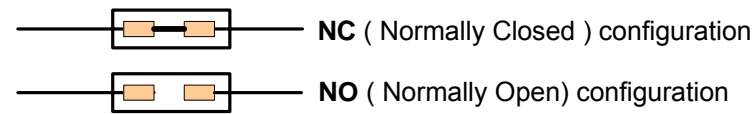
ZX107HSMC Signal listing

XCVR_RXPx XCVR_RXNx	0402 SMD	7	P	N	6	P	N	5	P	N	4	P	N	3	P	N	2	P	N	1	P	N	0	P	N
		RP7	RN7	RP6	RN6	RP5	RN5	RP4	RN4	RP3	RN3	RP2	RN2	RP1	RN1	RP0	RN0								

XCVR_TXPx XCVR_TXNx	0402 SMD	7	P	N	6	P	N	5	P	N	4	P	N	3	P	N	2	P	N	1	P	N	0	P	N
		TP7	TN7	TP6	TN6	TP5	TN5	TP4	TN4	TP3	TN3	TP2	TN2	TP1	TN1	TP0	TN0								

XCVR
 RPx RNx : XCVR_RXPx XCVR_RXNx where x 7..0
 TPx TNx : XCVR_TXPx XCVR_TXNx where x 7..1

0402 SMD Package



LVDS							
TX -Listed Silk		Differential	Single	Single	Differential	RX- Listed Silk	
0	P	TP0	D4	D5	RP0	P	0
	N	TN0	D6	D7	RN0	N	
1	P	TP1	D8	D9	RP1	P	1
	N	TN1	D10	D11	RN1	N	
2	P	TP2	D12	D13	RP2	P	2
	N	TN2	D14	D15	RN2	N	
3	P	TP3	D16	D17	RP3	P	3
	N	TN3	D18	D19	RN3	N	
4	P	TP4	D20	D21	RP4	P	4
	N	TN4	D22	D23	RN4	N	
5	P	TP5	D24	D25	RP5	P	5
	N	TN5	D26	D27	RN5	N	
6	P	TP6	D28	D29	RP6	P	6
	N	TN6	D30	D31	RN6	N	
7	P	TP7	D32	D33	RP7	P	7
	N	TN7	D34	D35	RN7	N	
8	P	TP8	D40	D41	RP8	P	8
	N	TN8	D42	D43	RN8	N	
9	P	TP9	D44	D45	RP9	P	9
	N	TN9	D46	D47	RN9	N	
10	P	TP10	D48	D49	RP10	P	10
	N	TN10	D50	D51	RN10	N	
11	P	TP11	D52	D53	RP11	P	11
	N	TN11	D54	D55	RN11	N	
12	P	TP12	D56	D57	RP12	P	12
	N	TN12	D58	D59	RN12	N	
13	P	TP13	D60	D61	RP13	P	13
	N	TN13	D62	D63	RN13	N	
14	P	TP14	D64	D65	RP14	P	14
	N	TN14	D66	D67	RN14	N	
15	P	TP15	D68	D69	RP15	P	15
	N	TN15	D70	D71	RN15	N	
16	P	TP16	D72	D73	RP16	P	16
	N	TN16	D74	D75	RN16	N	

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

XCVR signal assignment							
TX -Listed Silk		Differential	Differential	RX- Listed Silk			
7	P	TP7	RP7	P	7		
	N	TN7	RN7	N			
6	P	TP6	RP6	P	6		
	N	TN6	RN6	N			
5	P	TP5	RP5	P	5		
	N	TN5	RN5	N			
4	P	TP4	RP4	P	4		
	N	TN4	RN4	N			
3	P	TP3	RP3	P	3		
	N	TN3	RN3	N			
2	P	TP2	RP2	P	2		
	N	TN2	RN2	N			
1	P	TP1	RP1	P	1		
	N	TN1	RN1	N			
0	P	TP0	RP0	P	0		
	N	TN0	RN0	N			

RPx RNx : XCVR_RXPx XCVR_RXNx where x 7..0
 TPx TNx : XCVR_TXPx XCVR_TXNx where x 7..1

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

J3	
Pin	Assigned
1	12.0V
2	GND
3	3.3V

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