

Product Name: ZX122xB – PCISIG M.2 NGFF passive breakout module offering all KEY type combinations

Product Description: ZX122xB is PCISIG M.2 (NGFF) breakout module provides access to all PCISIG M.2 signals. It is designed to facilitate real-time electrical test and measurements. ZX122xB is breakout module designed for test and measurement , signal integrity , characterization , test and debug of any PCISIG M.2 design via onboard 0405 SMD shunt landing pads.

- a) All PCISIG M.2 signals are routed to 0402 SMD shunt package for easy probe access.
- b) Each 0402 SMD shunt package may be wired for signal measurement to scope / test equipment.
- c) Each 0402 SMD shunt package may be cut and redirected to another signal (onboard or offboard) for test and debug
- d) Ideal breakout module for manufacturing / development loopback test.

ZX122xB is commonly used throughout this document. It is referred to the ZX122xB module where the “x” will be different M.2 Key type , as listed in the *Ordering Information* on page 3

ZX122xB features:

- 1- Provides access to ALL PCISIG signals via onboard 0402 SMD shunt packages, (67 signals on single M.2 Key design).
- 2- ZX122xB is designed to interface with host only, enabling interfaced (wired or connected), or any evaluation board (development board) for purpose of debugging, development, testing and characterization.
- 3- Listed number adjacent to each 0402 SMD shunt package represents the associated PCISIG M.2 connector’s pin number.
- 4- All traces are 50 Ohms impedance controlled with exceptional signal integrity & crosstalk.
- 5- Four layers PCB design, inner layers are GND planes with direct connection to GND stitching vias & top/bottom GND fills.
- 6- Accessible GND exposed copper, enabling for ease of access for test and measurement. see “ZX122xB Ground Access” on page 2
- 7- Mates with any matching key M.2 Host.
- 8- ZX122xB is offered in **7 different M.2 Key types**, See *Ordering Information* section
- 9- Compatible with other design derivatives utilizing PCISIG M.2 connectors, such as NGSFF EDSFF
- 10- Probing wire , ZX00BC2PH30, is offered to application requiring scope probe interface. See ordering information

Electrical: Insertion loss > -2dB @6GHz
Trace impedance: 50 Ω
Operating Temperature: -65°C to +170°C
M.2 Edge Connector type (J1) : see Ordering INFO
Mates with: see Ordering INFO
Plating: Gold 100U
Shunt:
Package: 0402 SMD

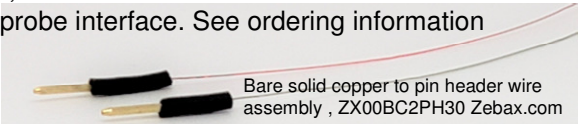
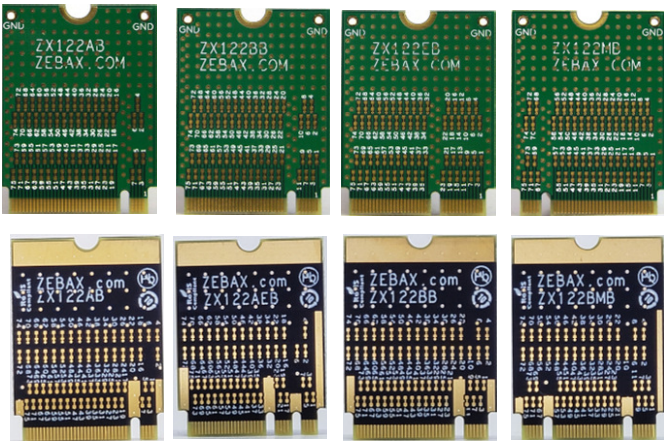
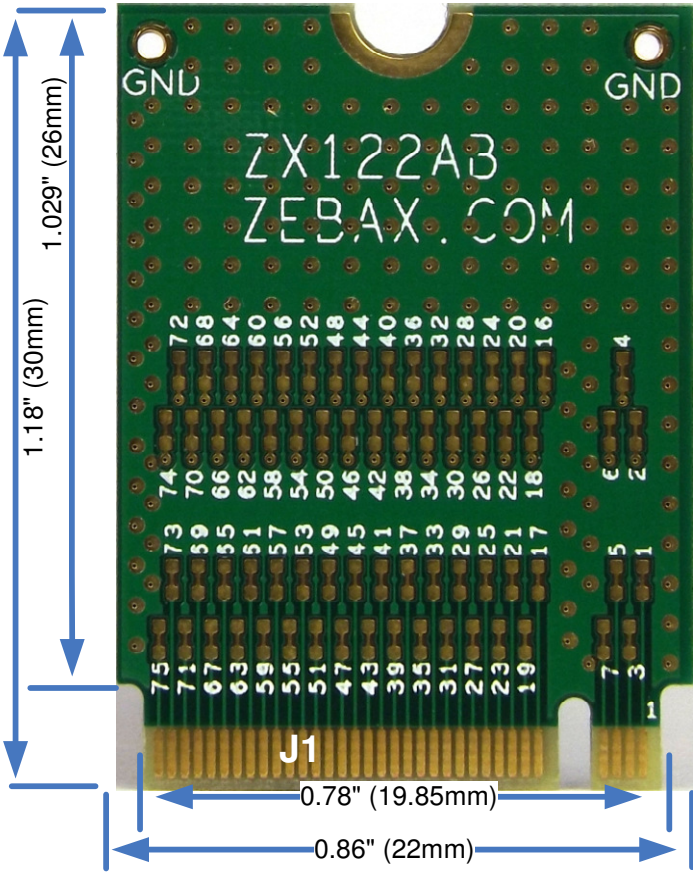
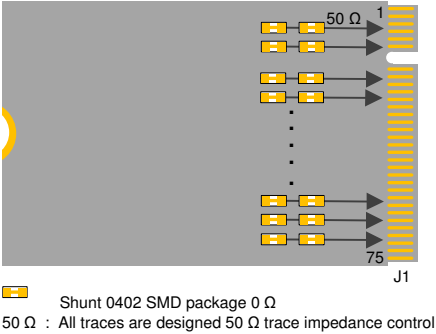


Figure 1 – ZX122xB Circuit diagram



More pictures on page 2,3

Application: Bringup, testing, emulation, development, modular design evaluations of PCISIG M.2 (NGFF – Next Generation Form Factor). Manufacturing - development loopback test. M.2 PCISIG module design test characterization. DP WIFI GPS GYRO Compass BT FM sensor module Add-in Card DisplayPort SDIO WWAN PCIe-based SSD SATA-based PCIe / USB 3.1 SSIC Gen1-Based Socket 1 2 3. All ZX122MA, and ZX122BMA-M modules are compatible with NGSFF / NF1 (Next Generation Small Form Factor) as well as EDSFF (Enterprise & Datacenter SSD Form Factor) interface solution or any other design interface utilizing M.2 connector series.

Mates with : Any standard M.2 NGFF PCISIG connectors on host and device Key A B C E M A-E B-M
TE 2199125 2199119 2199230 2199133 JAE SM3ZS067
Bellwether: SD-80148 SD-80149 SD-80152 SD-80159 Amphenol
NGSFF NF1 EDSFF

NGSFF NDSFF compatibility : ZX122xB is PCISIG M.2 (NGFF) breakout adapter provides access to all PCISIG M.2 signals. There have been emerging design application solutions utilizing M.2 connector series, such as NGSFF / NF1 , EDSFF and more. ZX122xB is fully compatible with these design derivatives since it provides hardware test & measurement capability.

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

Note ALL ZEBAX products are RoHS compliant and Lead Free unless otherwise indicated.

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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	ASSEMBLY DRAWING	
	ITEM: ZX122xB M.2 NGFF PCISIG	
DESCRIPTION: PCISIG M.2 NGFF passive breakout module keys A A-E B B-M C E and M		
CHECKED: M. MARINA	DRAWN: SONYA	REVISION: 1.0
		SHEET: 1 OF 3

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Breakout Access : All ZX122xB breakout adapters provide breakout access via onboard 0402 SMD shunts landing pads. All signals are accessible on top layer of the module. Dedicated GND test point interfacing with the inner ground layers + top/bottom GND fills.

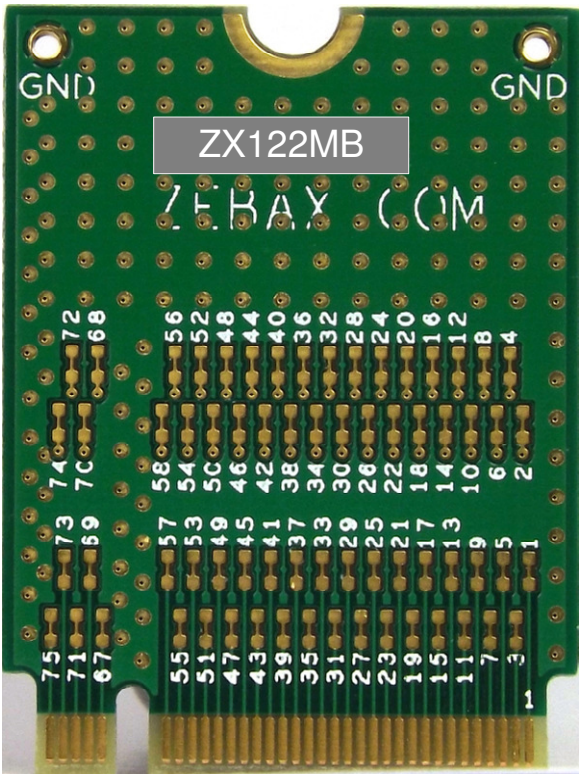
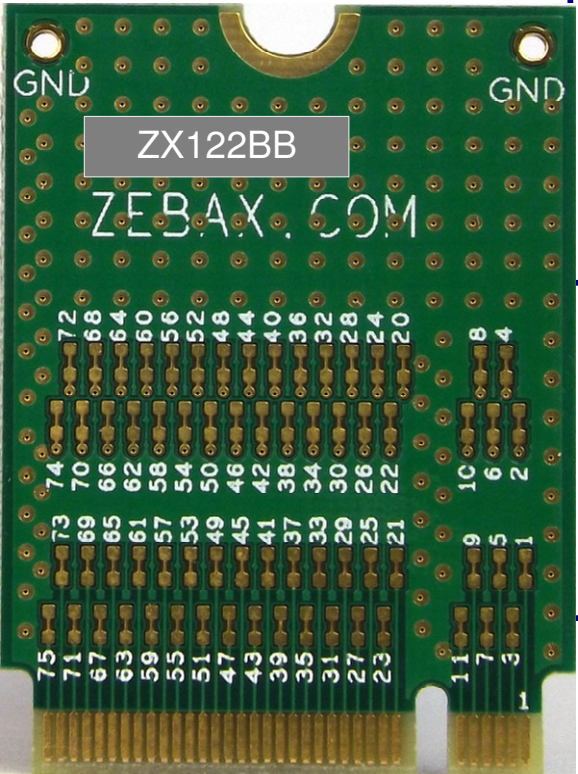
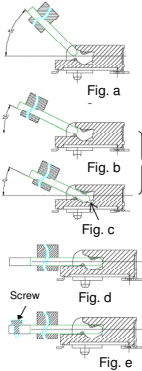
ZX122xB Ground Access : ZX122xB provides exposed copper or GND test point (depending to ZX122xB model) for accessing the module’s ground reference. The ZX122xB is 4 layers PCB design, where the 2 inner layers are used as the module’s ground reference. The Ground stitching vias , the top / bottom ground fills and the inner ground planes are all interconnected, hence referred as “GND”. The exposed copper or the GND test point (depending to ZX122xB model) provide access to the ZX122xB GND reference. The exposed coppers provides ease of access to ZX122xB GND reference.

In order to improve signal integrity , please connect one of the exposed copper or the GND test point to your nearest system GND reference.

Module Insertion, Removal process: In order to avoid any mechanical stress or damage to ZX122xB, please follow the below listed guidelines for insertion and removal process:

- 1- Move the Module against the housing chamber, see figure a
- 2- Rotate module to 25°, insert it until the module surface reaches the ramp, figure b, c
- 3- Rotate the module to horizontal position, see figure d
- 4- Fix the module by screw, see figure e

ZX122xB part numbers : ZX122xB is offered in 7 different M.2 Key types, serving variety of PCISIG M.2 breakout applications. Below are ZX122xB modules for reference.



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DESCRIPTION: PCISIG M.2 NGFF passive breakout module keys A A-E B B-M C E and M		
CHECKED: M. MARINA	DRAWN: SONYA	REVISSION: 1.0
		SHEET: 2 OF 3

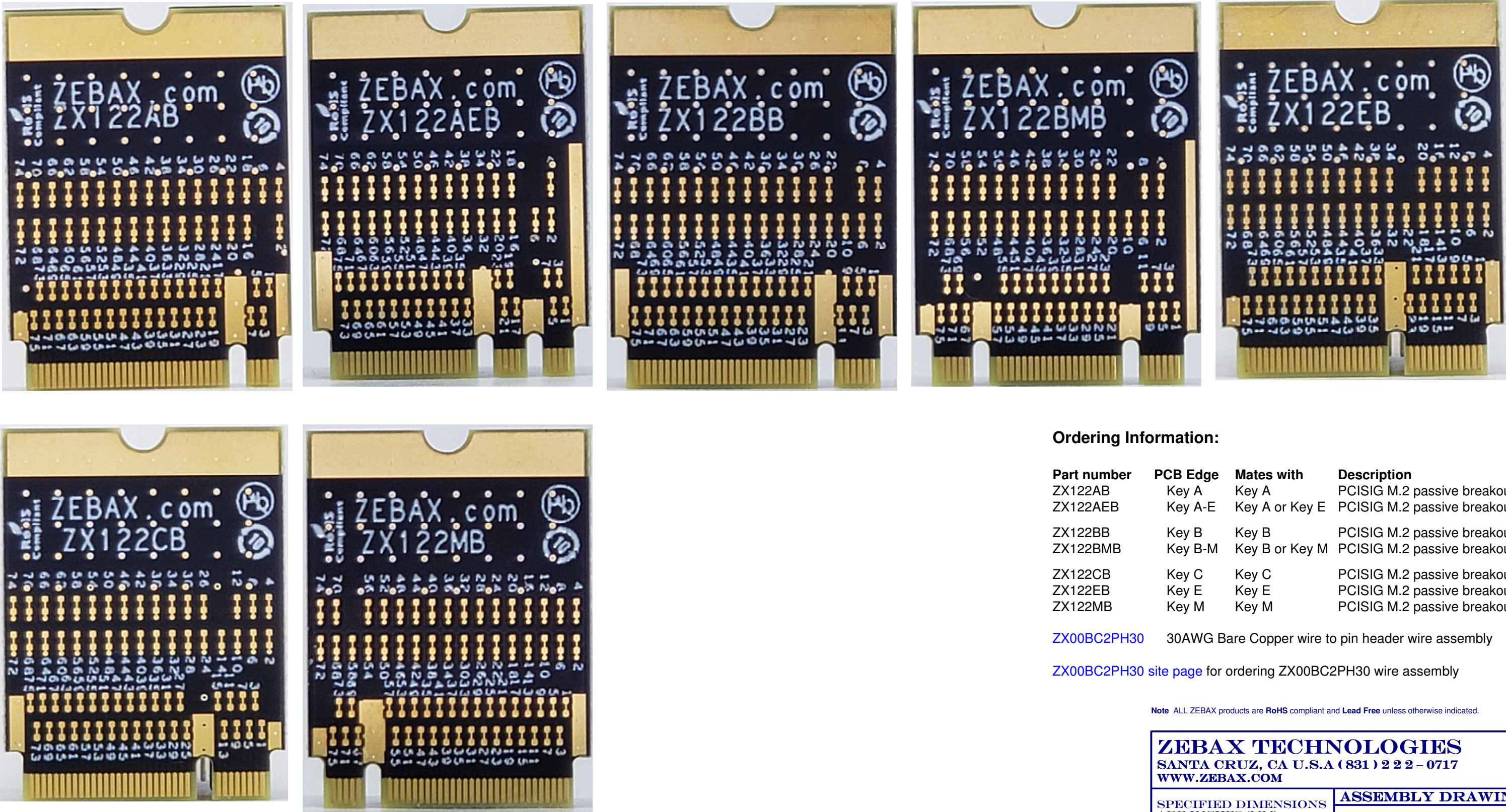
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Ordering Information:

Part number	PCB Edge	Mates with	Description
ZX122AB	Key A	Key A	PCISIG M.2 passive breakout module
ZX122AEB	Key A-E	Key A or Key E	PCISIG M.2 passive breakout module
ZX122BB	Key B	Key B	PCISIG M.2 passive breakout module
ZX122BMB	Key B-M	Key B or Key M	PCISIG M.2 passive breakout module
ZX122CB	Key C	Key C	PCISIG M.2 passive breakout module
ZX122EB	Key E	Key E	PCISIG M.2 passive breakout adapter
ZX122MB	Key M	Key M	PCISIG M.2 passive breakout adapter

ZX00BC2PH30 30AWG Bare Copper wire to pin header wire assembly

ZX00BC2PH30 site page for ordering ZX00BC2PH30 wire assembly

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