

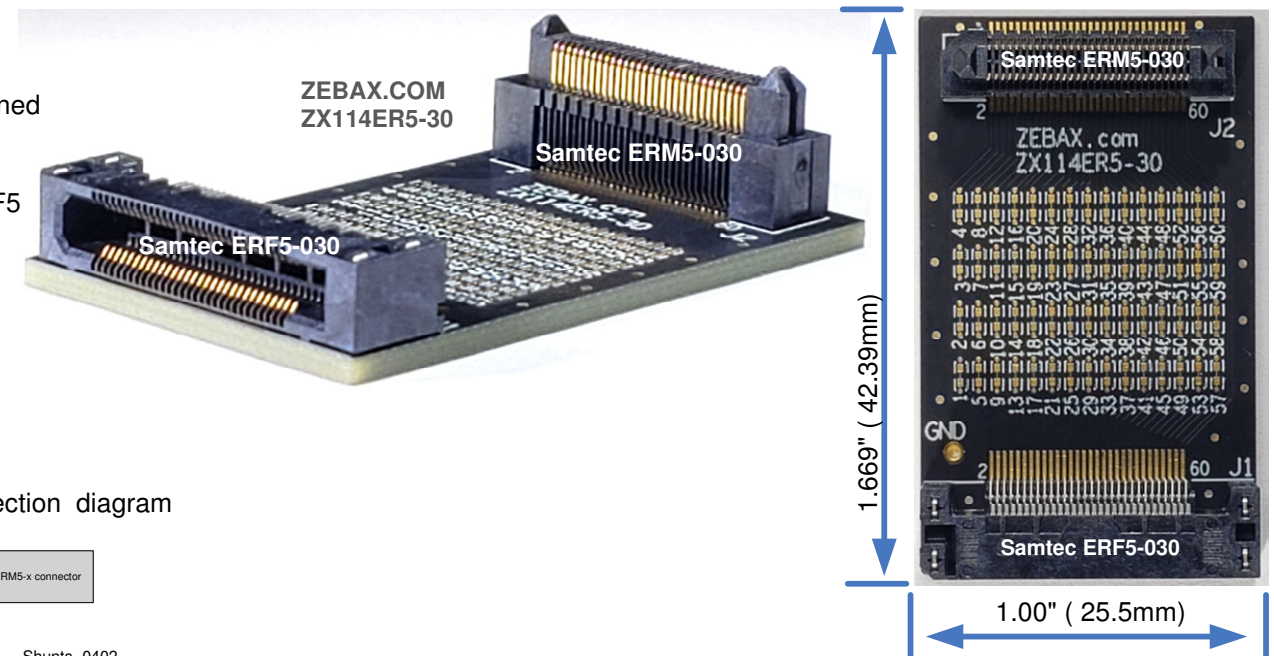
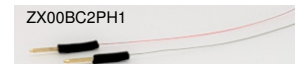
Product Name: ZX114ER5-xx Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter

Product Description: ZX114ER5-xx is Samtec ERM5 ERF5 connector series breakout adapter. It is collection of 5 modules. ZX114ER5-xx is designed for real-time electrical test and measurements, signal integrity , characterization, manufacturing loopback test applications.

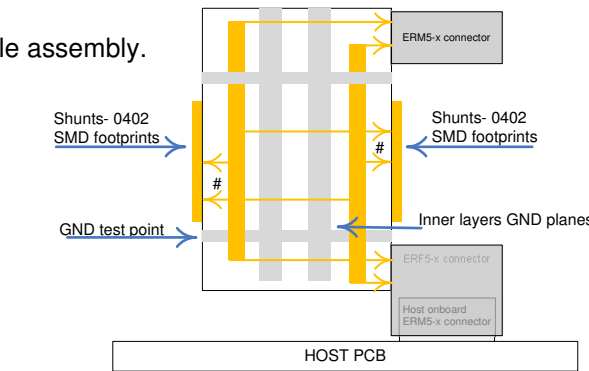
ZX114ER5-xx is commonly used throughout this document. It is referred to the ZX114ER5-xx module where the "xx" will be one of the ER5 / ERF5 connector series as listed in the *Ordering Information* section. Please refer to the following pages for detailed information on each listed module.

ZX114ER5-xx features:

- 1- Onboard ERM5 and ERF5 Samtec connectors
- 2- Provides access to all Samtec ERM5 – ERF5 signals are via onboard Shunts, accessible on both sides of PCB for easy probe access.
- 3- Passthrough design where pin 1 of the ERM5 header (plug) is connected to pin 1 of ERF5 socket (receptacle).
- 4- Shunts are accessible from both sides of PCB. They are standard 0402 SMD footprint package size.
- 5- Listed number adjacent to each Shunt represent the associated Samtec ERM5 – ERF5 connector pin number.
- 6- All traces are 50 Ohms impedance controlled with exceptional signal integrity & crosstalk.
- 7- Four layers PCB design, inner layers are GND planes.
- 8- Dedicated GND reference test points, interfacing with two inner GND planes.
- 9- **Mates** with any height and formfactor Samtec ERM5 – ERF5 edge rate rugged high speed connector & cable assembly.
- 10- The module is shipped with 12pc of probing wires – See ordering information, see ZX00BC2PH1
- 11- Ease of interface with single channel and differential scope probes.



ZX114ER5-xx simplified cross section diagram



Note:
Signal layers
Ground layers, Please note – The GND test point is connector to:
1- Top/Bottom GND fill
2- The inner layers ground planes
Shunts
1- Shunts are standard 0402 SMD package size
2- Shunts are available on both sides of ZX114ER5-xx module, making ALL Samtec connector signals accessible on both top and bottom sides of the module.
ERF5-xx connector is vertical to PCB
ERM5-xx connector is Right Angle type on ZX114ER5-xx which plugs into any Samtec ERF5 form factor connector.
ERM5-xx signals path to Shunts and to/from ERF5-xx.

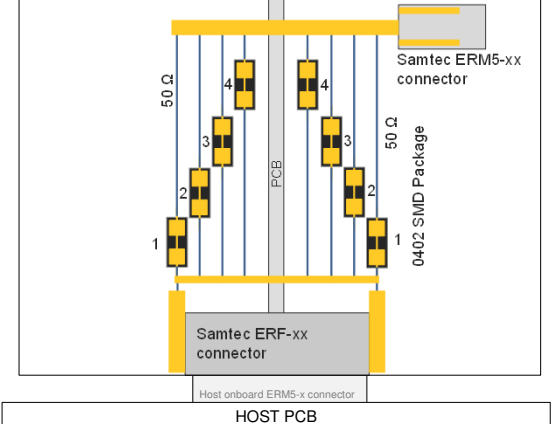
Electrical:
Insertion loss > -2dB @3GHz
Trace impedance: 50 Ω
Operating Temperature: -55°C to +125°C
Samtec Connector:
Onboard Connector: ERM5-xxx 2rows per xx , where xx is 10 .. 50 pins/row
ERF5-xxx 2rows per xx , where xx is 10 .. 50 pins/row
Mates with: Any Samtec ERM5 & ERF5 formfactor
Pitch: 0.020" (0.50mm) pin to pin pitch
Plating: 10μ" (0.25μm)
Shunt:
Package: Standard 0402 SMD package

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

Mates with : ZX114ER5-xx mates with any height and formfactor Samtec ERM5 ERF5 edge rate connector series.
Mates with ERM5 & ERF5 connector series :
1- Latching , -L
2- Extended Guide Post Shield, -EGPS.
3- Extended Guide Post, -EGP.
4- Extended Guide Post Shield, -DSS.
5- ERCD and ERDP micro and twinax cable assembly

Breakout Access : All ZX114ER5-xx breakout adapters provide access to ALL Samtec ERM5 and ERF5 connectors via onboard Shunts. All the signals are accessible on top & bottom layers of the module. Please refer to the simplified circuit diagram for details.

ZX114ER5-xx simplified circuit diagram



Note: 1- Shunts are standard 0402 SMD package size
2- Shunts are available on both sides of ZX114ER5-xx module, making ALL Samtec connector signals accessible on both top and bottom sides of the module.
3- Listed number adjacent to each Shunts represent the associated Samtec ERM5 – ERF5 connector pin number.

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

Please refer to the following pages for more information on mechanical dimensions and module outline on the listed modules supporting ERM5, ERF5

Ordering Information:

Part number	Mates with	Description
ZX114ER5-10	ERM5-010 ERF5-010	2 rows x 10 pins/row breakout adapter
ZX114ER5-20	ERM5-020 ERF5-020	2 rows x 20 pins/row breakout adapter
ZX114ER5-30	ERM5-030 ERF5-030	2 rows x 30 pins/row breakout adapter
ZX114ER5-40	ERM5-040 ERF5-040	2 rows x 40 pins/row breakout adapter
ZX114ER5-50	ERM5-050 ERF5-050	2 rows x 50 pins/row breakout adapter

Ordering any of ZX114ER5-xx includes one package of ZX00BC2PH1.

ZX00BC2PH1 12 pieces of 36AWG Bare Copper wire to pin header wire assembly

ZX100ACC-SS site page for ordering additional flying leads wire assembly

Note
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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	ASSEMBLY DRAWING	
	ITEM: ZX114ER5-xx	
DESCRIPTION: ERM5 ERF5 Samtec Edge Rate rugged high speed Breakout Adapter		
CHECKED: M. MARINA	DRAWN: MATTHEW	REVISION: 1.0 SHEET: 1 OF 4


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Product Name: ZX114ER5-xx Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter

Signal Access & re-route: Re-routing any signal on ZX114ER5-xx is implemented by cutting inner-connecting Shunt's trace and redirect to the new signal or test equipment.

Typical signal connection:
0402 SMD Package 

Ground : ZX114ER5-xx is 4 layers PCB design where the inner layers are Ground layers. They are connected to the GND test point as well as top & bottom GND fills. For improved signal integrity, please connect the GND test point to system GND reference point. See Cross Section diagram for details.

Break signal path: 

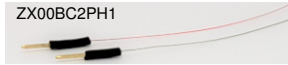
ZX114ER5-xx part numbers : ZX114ER5-xx is offered in 5 different models, supporting each ERM5 / ERF5 connector size. Below are each part number with associated mechanical diagram.

Typical Application: ZX114ER5-xx is designed for purpose of test and debugging at full connector's bandwidth. It provides new approach in usage of breakout adapters by :

- 1- Utilizing single or differential scope probe.
- 2-Enabling design changes, by re-assignment of any signal by means of cut and solder, where any signal may be cut and assigned to new location by jumper wires.

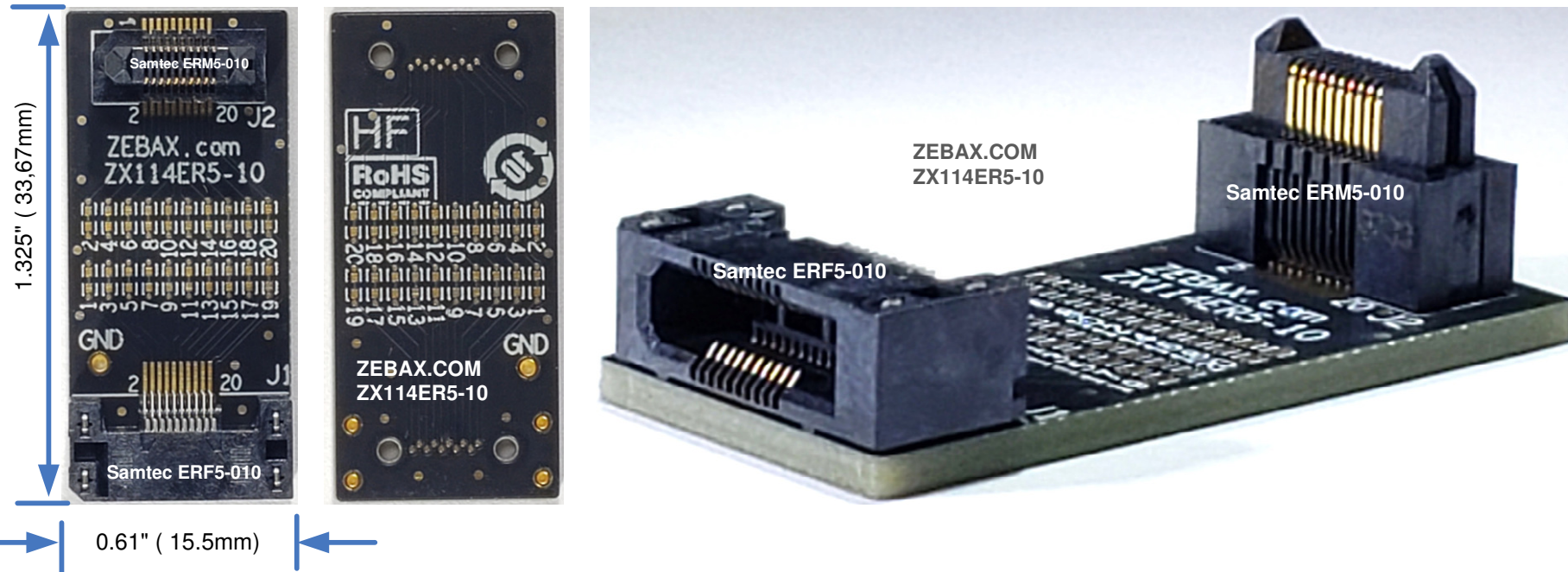
Scope Probe wire Installation:

- 1- It is recommended to keep the probe wire length at 0.5" (1.2cm) long.
- 2- Zebax provided ZX00BC2PH1 , (36AWG Bare Copper wire to pin header wire assembly) is an ideal probing wire solution where the header fits into any single ended or differential probe.



- 2- In order to avoid ground loop problems, please use the shortest Ground probe wire interfacing to the nearest GND reference point. ZX114ER5xxP provides GND test point to be utilized as GND reference interface with host.

ZX114ER5-10 – Two rows x 10 pins per row ERM5 – ERF5 breakout adapter. ZX114ER5-10 supports any formfactor ERM5-010 & ERF5-010 Samtec Edge Rate rugged connectors as well as cable assemblies.



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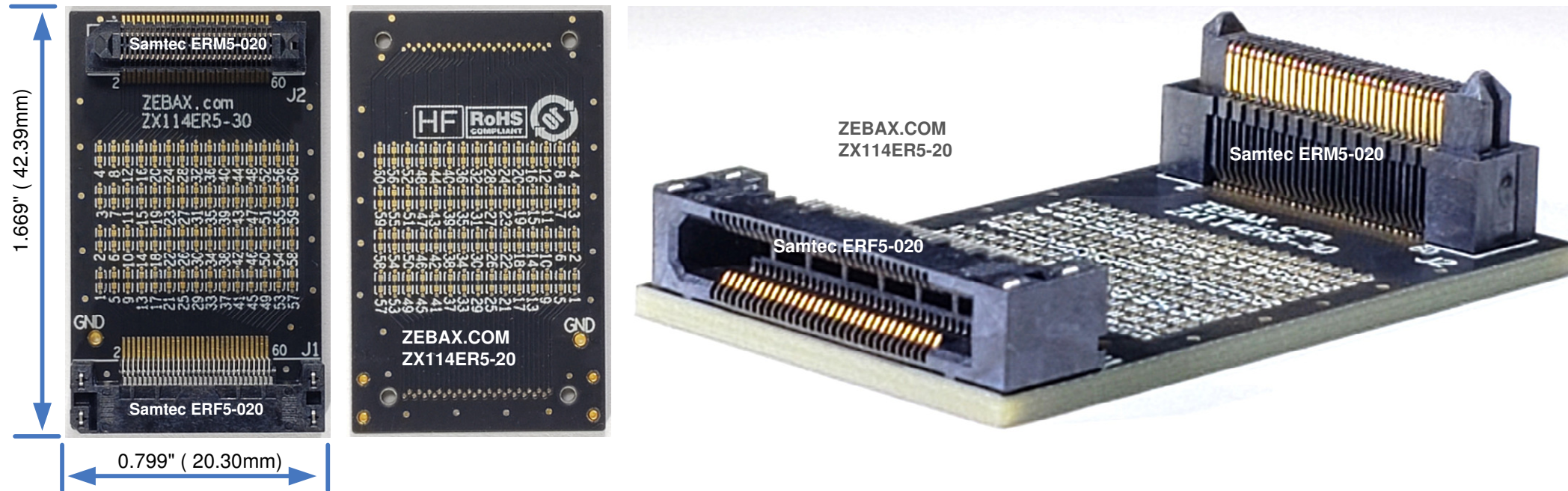
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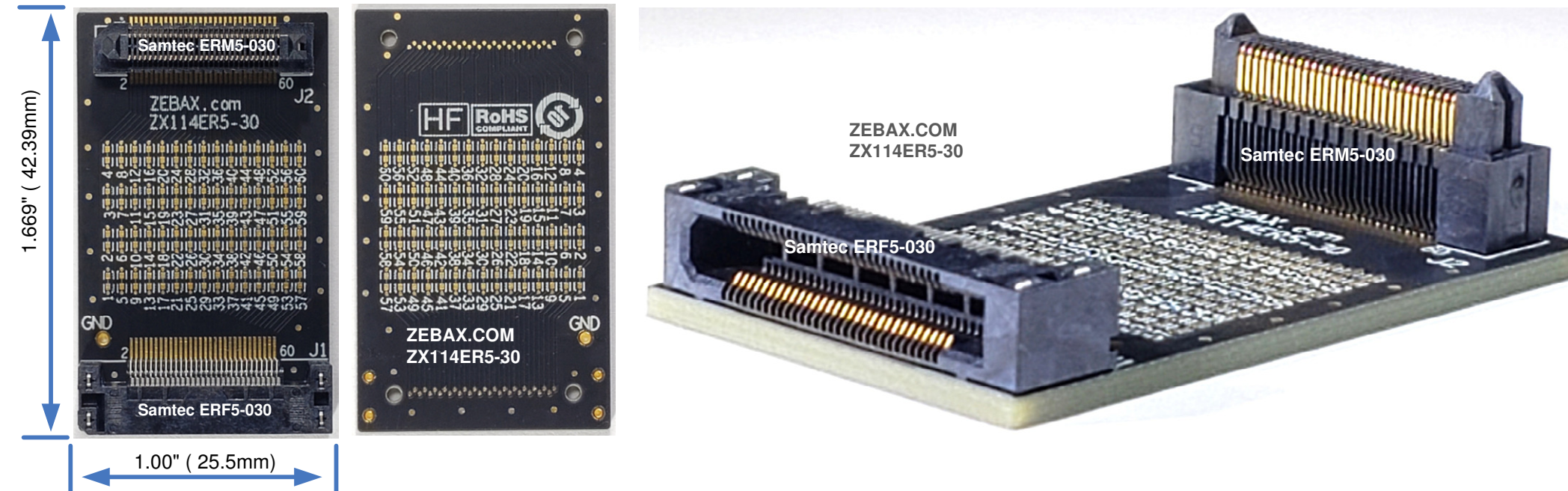
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Product Name: ZX114ER5-xx Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter

ZX114ER5-20 - Two rows x 20 pins per row ERM5 – ERF5 breakout adapter. ZX114ER5-20 supports any formfactor ERM5-020 & ERF5-020 Samtec Edge Rate rugged connectors as well as cable assemblies.



ZX114ER5-30 - Two rows x 30 pins per row ERM5 – ERF5 breakout adapter. ZX114ER5-30 supports any formfactor ERM5-030 & ERF5-030 Samtec Edge Rate rugged connectors as well as cable assemblies.



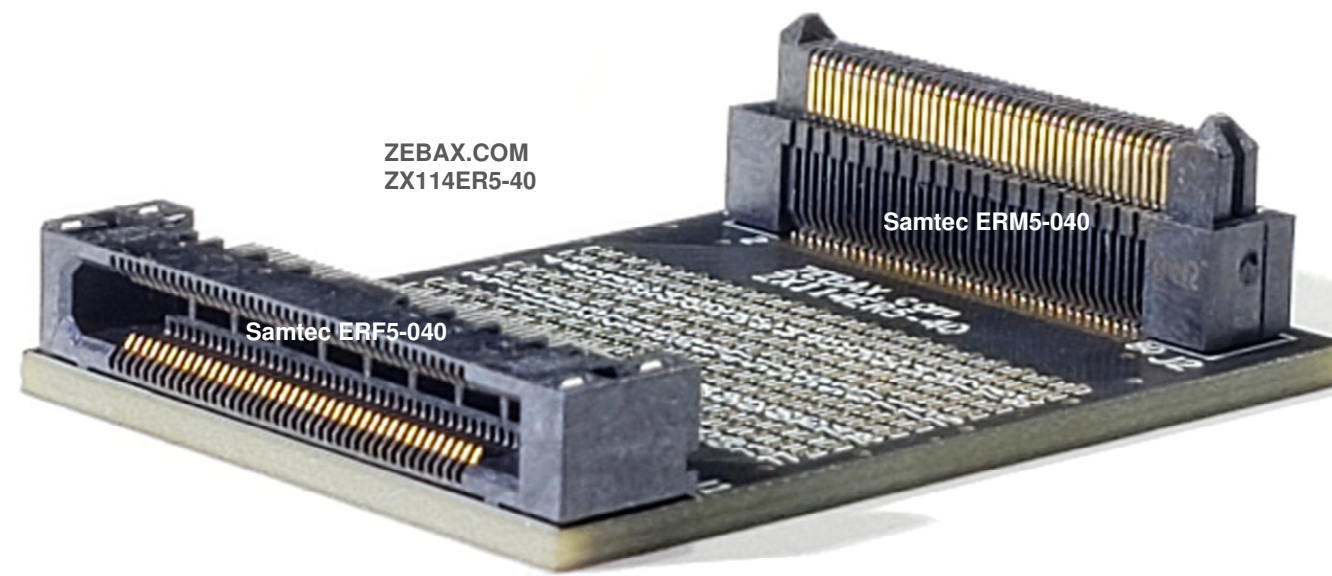
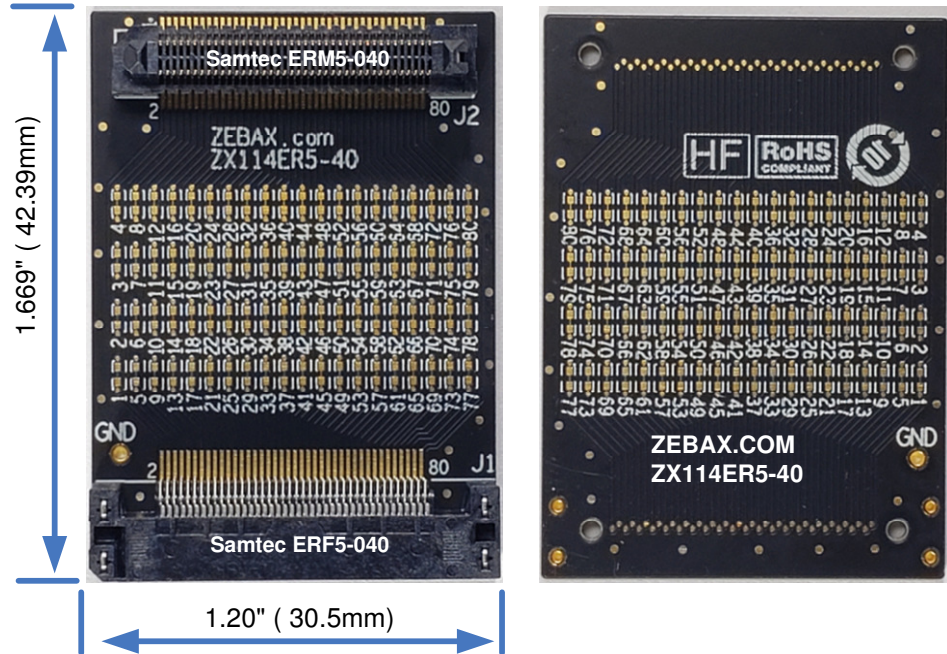
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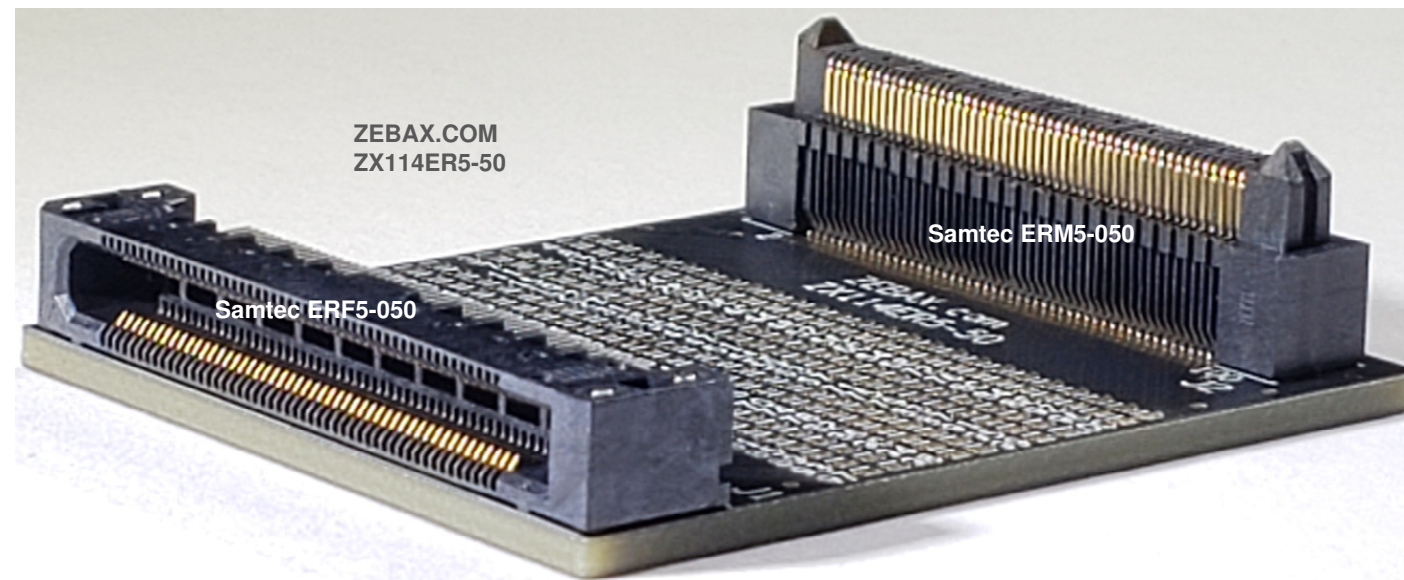
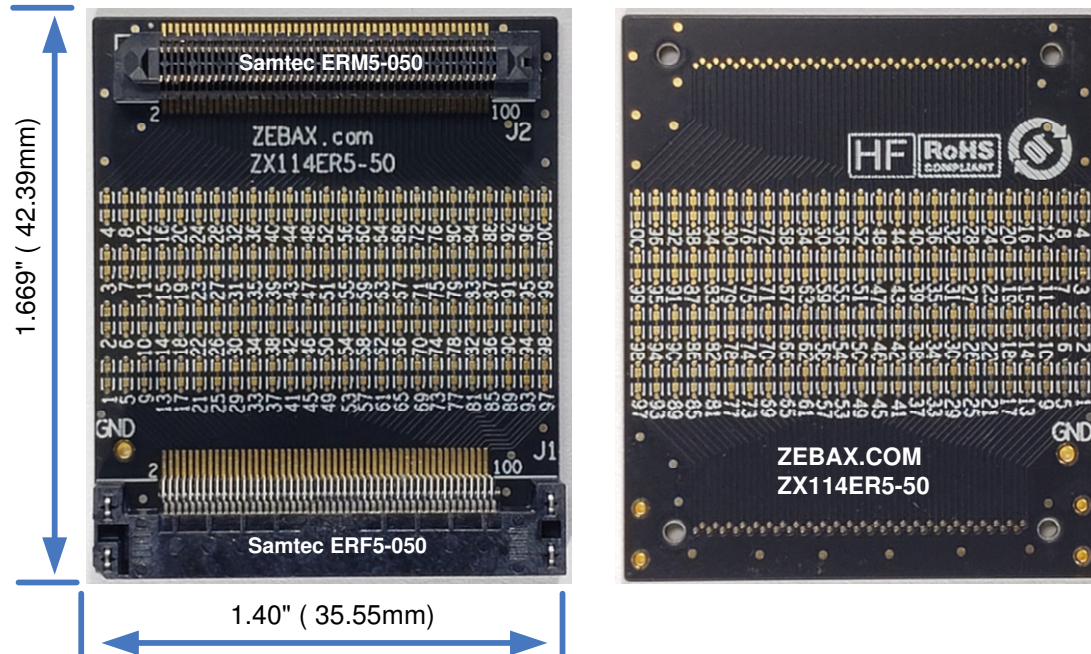
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Product Name: ZX114ER5-xx Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter

ZX114ER5-40 - Two rows x 40 pins per row ERM5 – ERF5 breakout adapter. ZX114ER5-40 supports any formfactor ERM5-040 & ERF5-040 Samtec Edge Rate rugged connectors as well as cable assemblies.



ZX114ER5-50 - Two rows x 50 pins per row ERM5 – ERF5 breakout adapter. ZX114ER5-50 supports any formfactor ERM5-050 & ERF5-050 Samtec Edge Rate rugged connectors as well as cable assemblies.



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