

**Product Name:** ZX230CRAR USB type C receptacle to USB Type A receptacle electrical test breakout adapter

**Product Description:** USB Type C Receptacle to USB Type A Receptacle test board - breakout adapter - converter. **ZX230CRAR** is designed for general purpose electrical signal analysis, test, measurement as well as compatibility & debug applications.

ZX230CRAR is designed for SuperSpeed Gen1 ( 2.5GHz ) SuperSpeed Plus Gen2 ( 5GHz ) and future 20Gbps ( **10GHz** ) bandwidth - electrical performance. Please refer to page 2 for the s-parameter detained information.

ZX230CRAR is shipped with cable assembly, ZXJS1173-230C, enabling full access to VBUS, GND, CC1, CC2, SBU1 and SBU2 signals. The cable assembly includes pin socket, mating with any standard pin header ( 0.025" / 0.63mm SQ pin header ).

RX2-P/N as well as TX2-P/N signal pairs are available on the SMA connector.

ZX230CRAR is designed using 4 layer PCB where the inner layers are GND planes. The GND test point is connected to the inner layer GND planes as well as top/bottom fill.

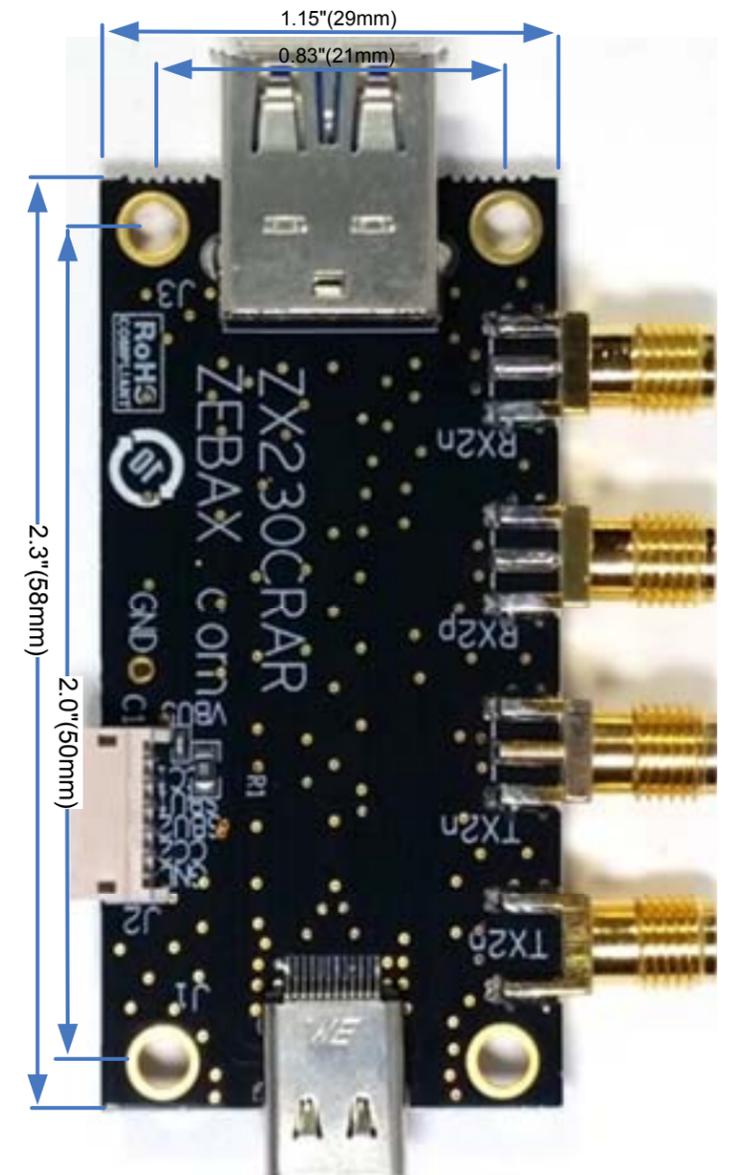
**Application:** USB electrical signal analysis & measurements. Compatibility test and debug.

**Supported bandwidth:** Supporting SuperSpeed Gen1 ( 2.5GHz ) SuperSpeed Gen2 ( 5GHz ) and future 20Gbps ( 10GHz ) Nyquist frequencies, bandwidth.

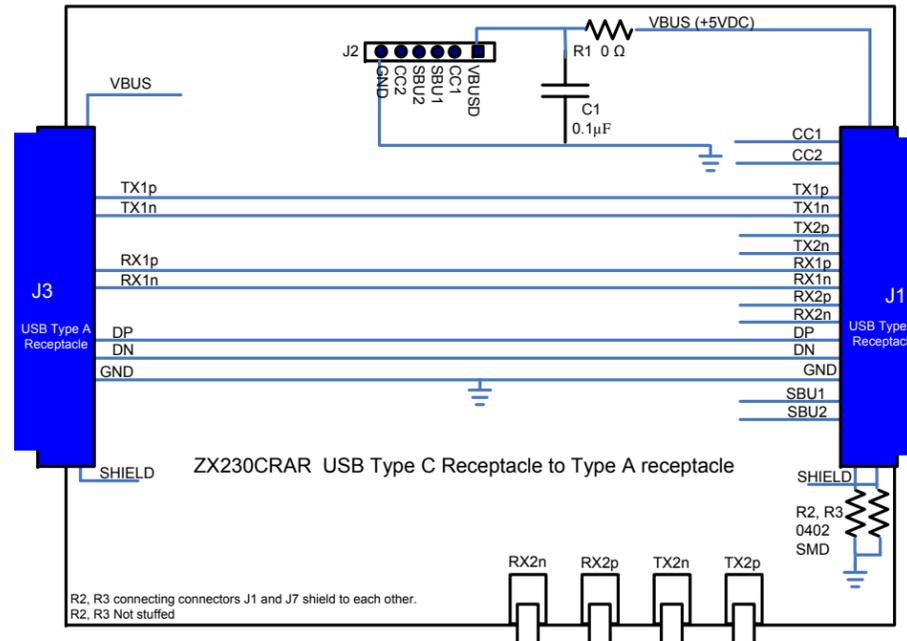
**Mates with :** **USB Type C Plug**  
**USB Type A Plug**  
**SMA connectors** mates with any standard SMA cable assembly.  
**Wire assembly mates with** any 0.025" (0.63mm) SQ post header length 0.23" ( 5.83mm )



ZXJS1173-USB wire assembly accessing VBUS, GND, CC1, CC2, SBU1 and SBU2



**Circuit Diagram**



R2, R3 connecting connectors J1 and J7 shield to each other.  
R2, R3 Not stuffed

Ordering INFO:  
Part Number ZX230CRAR



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

**Package includes:**

Item	Part number	Quantity	Description
1	ZX230CRAR	1	USB Type C Receptacle to USB Type A Receptacle electrical test breakout adapter.
2	ZXJS1173-230C	1	Wire assembly for accessing J2 signals, Note 1
3	ZX230CP	0	USB Type C TPA-P electrical test breakout module – Plug.
4	ZX230CR	0	USB Type C TPA-R electrical test breakout module - Receptacle.
5	ZX00WT-09NM	0	SMA Wrench Torque 5/16" (8mm)

**Notes:** 1- Supplied extension wire assembly enables to interface test equipment or 3<sup>rd</sup> party modules.

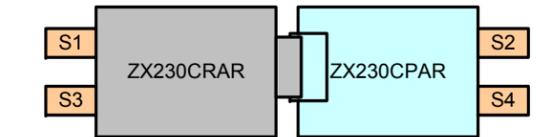
<b>ZEBAX TECHNOLOGIES</b> SANTA CRUZ, CA U.S.A ( 831 ) 2 2 2 - 0717 WWW.ZEBAX.COM		
SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT		ASSEMBLY DRAWING ITEM: ZX230CRAR
DESCRIPTION: USB Type C receptacle to USB type A receptacle electrical test breakout adapter		
CHECKED: M. MARINA	DRAWN: SLAVIK	REVISION: 1.0 SHEET: 1 OF 2

Notice  
ALL ZEBAX TECHNOLOGIES DESIGN SPECIFICATIONS, DRAWINGS, PUBLICATIONS, AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS." ZEBAX MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE MATERIALS, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF NO INFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE.  
Information furnished is believed to be accurate and reliable. However, Zebax Technologies assumes no responsibility for the consequences of use of such information or for any infringement of patents or other rights of third parties that may result from its use. Specifications mentioned in this publication are subject to change without notice. This publication replaces all other information previously supplied. Zebax Technologies products are not authorized as in life support devices or systems.

**Product Name:** ZX230CRAR USB type C receptacle to USB Type A receptacle electrical test breakout adapter Cont's

**S-Parameter, Insertion loss:** The following insertion loss measurements were obtained using Agilent NA with the following test case:

- 1- ZX230CPAR mating with ZX230CRAR at USB type C connector.
- 2- NT interfacing with the supplied SMA connectors on both ZX230CPAR and ZX230CRAR modules.



**Test network :** ZX230CRAR ( Type C Receptacle ) to ZX230CPAR ( Type C Plug )

S12 : TX2+ RX2+  
S34: TX2- RX2-

Signal Pairs	Insertion Loss at USB Gen1 Gne2 Nyquist frequencies (dB)			
	0.626GHz	1.25GHz	2.5GHz (Gen1)	5.0GHz (Gen2)
RX2-P/N	-1.00	-0.50	-1.44	-5.48
RX2-P/N	-1.12	-0.54	-3.45	-4.15

All values are dB

**S-Parameter files:** [ZX230CXAR-S-Parameter](#) – It is .7z file. It consists of .s2p files, only.

**Pinouts:** **USB Type C Receptacle to USB Type A Receptacle** and J2 signal assignments listed below

ZX230CRAR - USB Type C receptacle to USB Type A receptacle

Signal	USB-A		USB Type C		USB-A		Signal
	Pin#	Signal	Top	Bottom	Pin#	Signal	
J2.6 GND	4,7	GND	A1	B12	4,7	GND	J2.6 GND
<b>TX1p</b>	9	<b>TXp</b>	A2	B11	6	<b>RXp</b>	<b>RX1p</b>
<b>TX1n</b>	8	<b>TXn</b>	A3	B10	5	<b>RXn</b>	<b>RX1n</b>
J2.6 VBUS	1	VBUS	A4	B9	1	VBUS	J2.6 VBUS
J2.2 CC1			A5	B8			J2.4 SBU2
<b>DP</b>	3	<b>DP</b>	A6	B7	2	<b>DN</b>	<b>DN</b>
<b>DN</b>	2	<b>DN</b>	A7	B6	3	<b>DP</b>	<b>DP</b>
J2.3 SBU1			A8	B5			J2.5 CC2
J2.6 VBUS	1	VBUS	A9	B4	1	VBUS	J2.6 VBUS
<b>RX2n</b>	SMA		A10	B3	SMA		<b>TX2n</b>
<b>RX2p</b>	SMA		A11	B2	SMA		<b>TX2p</b>
J2.6 GND	4,7	GND	A12	B1	4,7	GND	J2.6 GND

J2	
Pin	Function
1	VBUS
2	CC1
3	SBU1
4	SBU2
5	CC2
6	GND

J2.x signals are accessible on J2 connector  
SMA: Signal available on SMA connector

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

<b>ZEBAX TECHNOLOGIES</b> SANTA CRUZ, CA U.S.A ( 831 ) 2 2 2 - 0717 WWW.ZEBAX.COM		
SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	ASSEMBLY DRAWING	
	ITEM: ZX230CRAR	
DESCRIPTION: USB Type C receptacle to USB type A receptacle electrical test breakout adapter		
CHECKED: M. MARINA	DRAWN: SLAVIK	REVISION: 1.0 SHEET: 2 OF 2

Notice

ALL ZEBAX TECHNOLOGIES DESIGN SPECIFICATIONS, DRAWINGS, PUBLICATIONS, AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS." ZEBAX MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE MATERIALS, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF NO INFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE.

Information furnished is believed to be accurate and reliable. However, Zebax Technologies assumes no responsibility for the consequences of use of such information or for any infringement of patents or other rights of third parties that may result from its use. Specifications mentioned in this publication are subject to change without notice. This publication replaces all other information previously supplied. Zebax Technologies products are not authorized as in life support devices or systems.