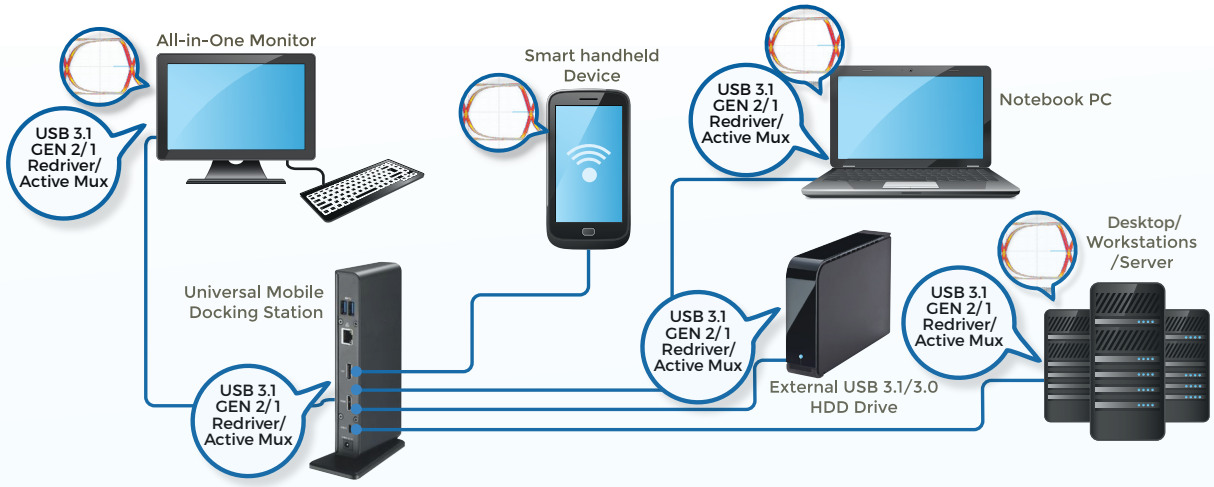
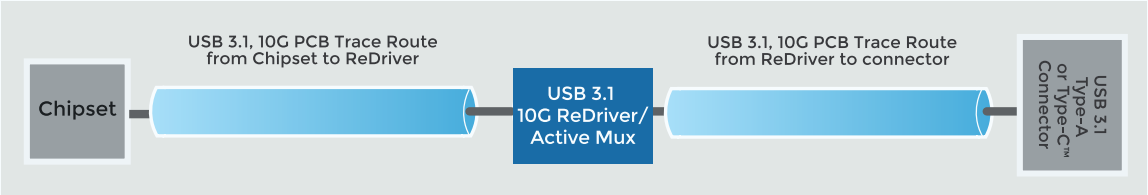
USB 3.1 GEN 2/GEN 1 ReDrivers & USB 3.1 GEN 1/Active Mux





Diodes USB 3.1 GEN 2 Redriver/Active Mux are a key technology for addressing the rising design complexity that the higher data rates of today's high speed interconnects introduce across every industry and across USB and Type-C ports.

To enable better signal integrity throughout the signal chain, Diodes Incorporated provides redrivers based on its industry-leading signal conditioning technology.

Our USB 3.1 GEN 2 Redriver/Active Mux offer better performance than protocol based signal retimers which act as an end-point that must terminate and then retransmit the signal, thus introducing delay and added system cost.

In addition, redrivers minimize jitter by conditioning and passing signals through at the physical layer.

PRODUCTS

- **PI3EQX1002B**
  10Gbps, 1-Port USB 3.1 GEN 2 Redriver, 3.3V
- **PI2EQX632E**
  5Gbps, USB 3.1 GEN 1 Active Mux Redriver, 1.8V
- **PI3EQX7841**
  5Gbps, USB 3.1 GEN 1 Active Mux Redriver, 3.3V with I²C Control
- **PI3EQX7741AIQ**
  5Gbps, 1-Port, USB 3.1 GEN 1 Redriver, Automotive Compliant
- **PI3EQX501BQ**
  5Gbps, Single-Channel USB 3.1 GEN 1 Redriver, Automotive Compliant

KEY FEATURES

- USB 3.1 GEN 2 and GEN 1 Compatible
- 5 & 10Gbps Serial Link with Linear Equalizer
- Pin or I²C Adjustable reciever equalization
- Pin or I²C Adjustable flat gain control
- Pin or I²C Adjustable linear swing control
- Adjustable power-down mode
- Automotive - AEC-Q Compliant
- Better performance than protocol based signal Retimers

BENEFITS

- Compensates USB 3.1 GEN 2/GEN 1 Channel Insertion Loss
- Automatic reciever detect configuration
- Channel based Auto "Slumber" mode
- Maintains signal integrity over long line lengths

FOR MORE INFORMATION: diodes.com

DL0000016/R1

USB 3.1 GEN 1/GEN 2 REDRIVERS/ACTIVE MUX

USB 3.1 ReDriver/Active Mux Solutions Selector Guide

Part Numbers	PI1EQX512A	PI2EQX511E	PI2EQX632E	PI3EQX501B/ PI3EQX501BQ	PI3EQX1002B	PI3EQX7502AI PI3EQX7502B PI3EQX7502M	PI3EQX7741AI/ PI3EQX7741AIQ	PI3EQX7742AI	PI3EQX7841
USB3.0/3.1 GEN2/ GEN1	GEN 1	GEN 1	GEN 1	GEN 1	GEN 2	GEN 1	GEN 1	GEN 1	GEN 1
Ports/Channels	1-Port/ 2-Channels	1-Channel	2-Port Mux	1-Channel	1-Port/ 2-Channels	1-Port/ 2-Channels	1-Port/ 2-Channels	2-Port/ 4-Channels	1-Port/ 2-Channels
Pkg Size (mm2)	2x2	1.6x1.6	2x2	2x2	2.5x4.5	4x4	4x4	3.5x9	4x4
Package Type	18-X2QFN	12-X2QFN	16-X2QFN	8-TDFN	30-TQFN	24-TQFN	20-TQFN	42-TQFN	20-TQFN
Vdd	1.0V (Industry's lowest power)	1.2V~1.8V	1.8V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V
EQ Settings	3~12 dB	3~12 dB	3~12 dB	3~12 dB	Contact Diodes'	3~9 dB	3~9 dB	3~9 dB	0~15 dB
DE Settings	0~6 dB	0~6 dB	0~6 dB	0~6 dB	Contact Diodes'	0~6 dB	0~6 dB	0~6 dB	0~6 dB
I²C	NO	NO	NO	NO	NO	NO	NO	NO	YES
Automotive Compliant Version available	NO	NO	NO	YES	NO	NO	YES	NO	NO
USB-IF Compliance	YES	YES	YES	YES	N/A	YES	YES	YES	YES
Design Kit, User and Layout Guide	YES	YES	YES	YES	YES	YES	YES	YES	YES
Suggested Application	SmartPhone Tablet,Ultrabook, Digital camera PC peripheral.	SmartPhone Tablet,Ultrabook, Digital camera PC peripheral.	Tablet Notebook Server Ultrabook Cables. Smartphone	Tablet Ultrabook SmartPhone Digital camera PC peripheral	Notebook Ultrabook Smartphone Tablet Server Cable Workstation Desktop	Notebook Ultrabook Server Server Blade Workstation Industrial PC	Notebook Cabling Server Embedded Automotive (Infotainment) Industrial PC, PC Add-on card	Server Storage Embedded Workstation Server Blade Industrial PC	Server Storage Embedded

For information or literature, please visit www.diodes.com/contact-us