



New Product Announcement

PI3DPX1225Q

10Gbps Automotive-Compliant 6:4 Active Crossbar Mux with Linear ReDriver for USB Type-C Connections

The PI3DPX1225Q is a DisplayPort™ (DP) 2.1 UHBR10/USB 3.2 Gen 2, 6:4 active mux Linear ReDriver™. It supports data rates up to 10Gbps for USB Type-C® automotive applications and is compliant to the VESA DP Alt 2.1 UHBR10 and USB 3.2 Gen 2 industry standard.

The device multiplexes three operating modes: one lane of USB 3.2; one lane of USB 3.2 and two channels of DP 2.1 UHBR10; or four channels of DP 2.1 UHBR10 to the USB Type-C connector. In addition, the AUX± channels are also multiplexed to the USB Type-C connector.

The DP 2.1 and USB 3.2 Gen 2 signals can be easily adjustable with equalization, output swing linearity, and flat gain values by the I2C control setting. This optimizes the DP/USB 10Gbps signal performance over a wide variety of physical media by reducing inter-symbol interference jitters.

Non-blocking linear equalization does not block the receiver DFE's adaptive channel controls, enabling support of DisplayPort transparent LT (link training) without dependency on the DP-Aux channels listener.

The product is available in the 40-Pin W-QFN6040-40 with a 4mm x 6mm footprint.

Automotive-compliant - AEC qualified, manufactured in facilities certified to IATF 16949, supporting PPAP documents.

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The DIODES Advantage

This automotive-compliant 10Gbps USB Type-C USB 3.2/DP 2.1 UHBR10 6:4 active crossbar mux for routing/multiplexing USB-C and/or DP signals.

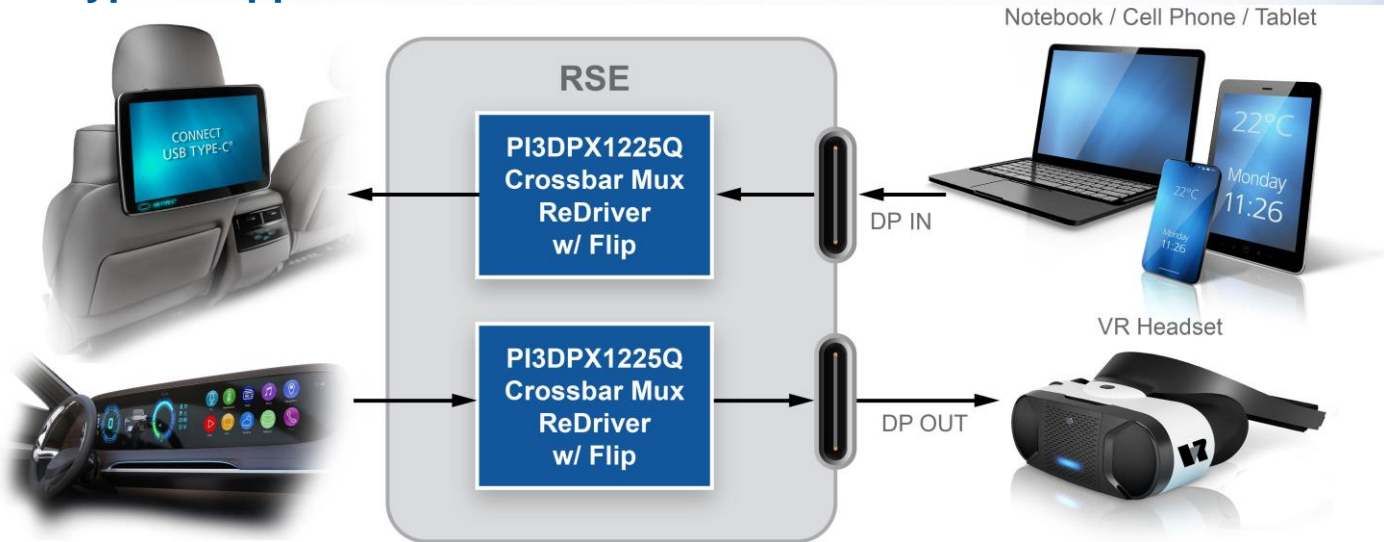
- **Supports the Latest USB 3.2 Spec with Three Operating Modes:**
 - 1-Port 10Gbps USB 3.2
 - 1-Port USB 3.2 + 2-Channel DisplayPort 2.1
 - 4-Channel DisplayPort 2.1
 Provides flexible USB Type-C, USB 3.2/DP-Alt mode operation
- **Programmable Receiver-Side CTLE, Output-Side Flat Gain, and Swing Linearity Settings**
Extends PCB trace lengths while reducing signal latency
- **Auto Power-Saving Modes for Both USB and DP**
Features USB U2/U3 and DP D3 power-saving modes with built-in AUX listener
- **Configuration and Performance Set via I2C**
Enables flexible control and setup for ease of use
- **Qualified to AEC-Q100 Grade 3**
Supports a -40°C to +85°C ambient operating temperature

Applications

USB and/or DP routing in:

- Smart cockpits
- Rear seat entertainment (RSE)

Typical Application



Automotive-Compliant USB Type-C ReDriver Portfolio

Part Number	Operation Voltage	Input Channels	Data Rate	Output Channels	Output Swing Max	Programming Interface(s)	Operating Temperature	Package
	V		Gbps		mV		°C	
PI3DPX1225Q	3.3	6/4	10	4	1,200	I2C	-40 to +85	W-QFN6040-40 (ZLB40)
PI3DPX1207Q	3.3	4	10	4	1,200	I2C or Pin-Strapping	-40 to +85	42-pin TQFN

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
PI3DPX1225Q3ZLBEX	Automotive	W-QFN6040-40 (ZLB40)	MSL-1	3,500	13" Tape & Reel