New Product Announcement

PI2DPX1264

1.8V 13.5Gbps DP 2.1 UHBR13.5/eDP 1.5 Linear ReDriver™ with AUX Listener For High-Resolution Video Connectivity

The PI2DPX1264 is a 13.5Gbps DisplayPort™ (DP) 2.1 UHBR13.5/eDP 1.5 linear ReDriver in a 4-to-4 configuration operated by a 1.8V power supply.

The device supports UHBR13.5, UHBR10, HBR3, HBR2, HBR, and RBR under various DP speeds. With its on-chip AUX channel listener, the device automatically monitors the system operation status and can enter D3 power saving mode. The AUX listener also monitors the link speed rate to auto-select pre-defined equalization (EQ) and flat-gain (FG) for optimized signal integrity (SI).

The PI2DPX1264's non-blocking linear ReDriver design ensures that the differential signals (conveying pre-shoot and de-emphasis equalization waveforms from the transmitter side to the receiver side) help optimize the overall channel link adjustment conducted by the system transmitter and receiver.

Its CTLE equalizers are implemented at the inputs of the ReDriver to compensate for channel loss and reduce inter-symbol interface (ISI) jitter. Programmable FG adjustment enables opening of the eye diagram. The CTLE EQ gains and flat gains are individually programmable on each channel for flexible tuning via I2C register setting.

The PI2DPX1264 is available in the very small 32-pin X2QFN (XUA32), with a 2.85mm x 4.5mm footprint, and operates across the -40°C to +85°C industrial temperature range.

The DIODES Advantage

The PI2DPX1264 is a 1.8V, 13.5Gbps, low-power, DP 2.1/eDP 1.5 linear ReDriver with AUX listener that provides optimized signal integrity.

- **VESA™ DisplayPort 2.1 and eDP 1.5 Transmission Modes**
  Supports UHBR13.5 (13.5Gbps), UHBR10 (10Gbps), HBR3 (8.1Gbps), HBR2 (5.4Gbps), HBR (2.7Gbps), and RBR (1.62Gbps)
- **Automatically Selects Pre-Defined EQ/FG Settings per Data Rate**
  Provides a simple solution for optimizing SI and extending PCB trace lengths
- **Built-in AUX Listener and Power Down Mode Support with Hot Plug Detect (HPD) Pin Input and DisplayPort AUX-Less ALPM Mode**
  Enables low power use for laptops and tablets
- **Transparent and Ultra-Low Latency Linear ReDriver**
  Improves signal integrity and system interoperation compatibility within high-speed DP applications
- **Thin and Small X2QFN-32 Package**
  Enables use in portable devices such as laptops

Applications

- Laptops, tablets, and desktop PCs
- VR/AR goggles
- Embedded display panels
- Display monitors
- Gaming consoles
- Active cables

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Typical Application

Product Portfolio

Part Number	Operating Voltage	Channels	Data Rate	Lanes/ Ports	Max. Output Swing	Programming Interface(s)	Operating Temperature	Package
	V		Gbps		mV		°C	
PI2DPX1264	**1.8**	**4**	**13.5**	**4**	**900**	**I2C**	**-40 to +85**	**X2QFN-32 (XUA32)**
PI2DPX1263	1.8	4	10	4	900	I2C	-40 to +85	X2QFN-32
PI2DPX2063A	1.8	4	20	4	1,000	I2C	-40 to +85	W-LGA4528-32
PI2DPX2023A	1.8	4	20	4	1,000	Pin Strap	-40 to +85	W-LGA4528-32

Ordering Information

Orderable Part Number	Compliance (Only automotive supports PPAP)	Package Code	Package	Moisture Sensitivity	Packing	
					Quantity	Carrier
PI2DPX1264XUAEX	Standard	XUA32	X2QFN-32 32-Pin 2.85mm x 4.5mm	MSL-1	3,500	13” Tape & Reel