



New Product Announcement

PI3HDX12221B

12Gbps 2-to-1 Active Mux with Linear ReDriver and I2C Control for HDMI 2.1 Multiplexing

The PI3HDX12221B is a 2-to-1 active mux for 4-channel HDMI™ links with a data rate up to 12Gbps for the HDMI2.1 standard.

To compensate for insertion losses within the channel, the device provides a maximum equalizer gain up to +8.8dB (HDMI 2.1@6GHz) and +5.5dB (HDMI 2.0 @ 3GHz).

The PI3HDX12221B is a non-blocking linear ReDriver™ which ensures that differential signals conveying pre-shoot and de-emphasis equalization will be transparently transmitted from the source-side to the receiver-side and linearly compensates channel losses to achieve longer channel lengths.

To reduce the ISI jitters and compensate channel loss, its CTLE equalizers are implemented at the inputs of the ReDriver. Programmable flat-gain and adjustable output linearity aid in opening the eye diagram.

The PI3HDX12221B is available in the W-QFN3060-40 (ZLD40) (3mm x 6mm x 0.75mm) package and operates across the -40°C to +85°C temperature range.

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The DIODES Advantage

The PI3HDX12221B is a non-blocking linear 2:1 active mux that improves signal integrity of HDMI 2.1 signals.

- **Transparent and Ultra-Low Latency Linear ReDriver Channels**
Provides improved signal integrity and system compatibility for HDMI 2.1 designs
- **Programmable Receiver-Side CTLE, Output Side Flat-Gain, and Swing Linearity Settings**
Extends PCB trace lengths while reducing signal latency
- **12Gbps, 4-Channel, 2-to-1 Active Mux for HDMI 2.1**
Supports 8K DTV video resolution and refresh rate with aggregated 4-channel data rate up to 48Gbps (12Gbps per channel)
- **ReDriver Gains/Equalization Set via I2C or Pin Strap**
Provides flexible control and setup for ease of use

Applications

- Digital TVs
- Display monitors
- Gaming consoles
- Laptop and desktop PCs
- Workstation and server systems
- Docking, KVM, and PC peripherals

Typical Application



HDMI 2.1 ReDriver Portfolio

Part Number	Operating Voltage	Channels	Protocols	Data Rate	Mux/ Demux	Max Output Swing	Programming Interface(s)	Operating Temperature	Packages
	V			Gbps		mV		°C	
PI3HDX12221B	3.3	4	HDMI 2.1, DVI, MHL	12	2:1 Mux	1200	Pin Strap and I2C	-40 to +85	W-QFN3060-40
PI3HDX12221	3.3	4	HDMI 2.1, DVI, MHL	12	2:1 Mux	1200	Pin Strap	-40 to +85	W-QFN3060-40
PI3HDX12212	3.3	4	HDMI 2.1, DVI, MHL	12	1:2 Demux	1200	Pin Strap	-40 to +85	W-QFN3060-40

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package Code	Package	Moisture Sensitivity	Packing	
					Quantity	Carrier
PI3HDX12221BZLDEX	Standard	ZLD40	W-QFN3060-40 (3mm x 6mm x 0.75mm)	MSL-1	3,500	13" Tape & Reel