

PI3HDX12212

3.3V 12.0Gbps HDMI2.1 1-to-2 Active DeMux Linear ReDriver

Features

- 1-to-2 Active DeMux Configuration for 4-lane HDMI Operation
- Data Rate Support up to 12Gbps to cover 12Gbps HDMI2.1, 6Gbps HDMI2.0 Speeds
- Quad-level Pin Strap Control through Combinational Logic Table for Equalizer Gain Value Selection
- Quad-level Pin Strap Control for Flat Gain and Output Swing Linearity Selection
- Input Signal Detection for Automatic Power Saving Mode
- Single Power Supply: 3.3v +/-0.3v
- Industrial Temperature Support: -40°C to +85°C
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. “Green” Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative.
<https://www.diodes.com/quality/product-definitions/>



Description

The PI3HDX12212 is a 1-to-2 Active DeMux linear ReDriver for 4-lane HDMI link with data rate support up to 12.0Gbps for HDMI2.1 (12Gbps), HDMI2.0 (6Gbps), HDMI1.4 (3.4Gbps), HDMI1.2 (2.5Gbps) standards. The maximum equalizer gain controls are +14dB (HDMI2.1@6GHz) and +8.5dB (HDMI2.0@3GHz) to compensate the insertion loss along the channel connection.

The non-blocking linear ReDriver design ensures that the differential signals conveying pre-shoot and de-emphasis equalization waveforms be transmitted from source-side to receiver-side with DFE. It helps to optimize the overall channel link adjustment conducted by the system transmitter and receiver. The CTLE equalizers are implemented at the inputs of the ReDriver to reduce the ISI jitters and compensate channel loss. The programmable flat gain and linearity adjustments support the eye diagram opening.

With the combinational logic control design, users can use pin strap method to select different EQ gains, flat gains, and output swing linearity for flexible design tuning.

System Application

Operation Mode	Application
HDMI DeMux	
DP++/HDMI Hybrid DeMux	

Applications

- Mobile Workstation
- Mobile Gaming Notebook
- Docking, KVM and PC Peripherals
- Display Monitors
- All-in-One PC
- Industrial Computing
- Embedded System

Ordering Information

Part Number	Package Code	Description
PI3HDX12212ZLDEX	ZLD	40-pin, 3 x 6 mm (TQFN)

Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated’s definitions of Halogen- and Antimony-free, “Green” and Lead-free.
3. Halogen- and Antimony-free “Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. E = Pb-free and Green
5. X suffix = Tape/Reel