



**KEY FEATURES**

- Programmable Receiver Equalization to Compensate Cable Loss
- Up to 15-dB for 1.65 Gbps and 17-dB for 2.25 Gbps Equalization Setting
- Integrated 50-ohm Active Receiver Termination
- Compliance with TMDs Electrical Specification up to 2.7 Gbps
- HDMI 1.3a compliant up to 2.25Gbps.
- DC or AC coupling Receiver up to 2.7 Gbps, capable of supporting DisplayPort 2.7 Gbps
- Support UXGA, WUXGA, & 1080p with 8/10/12 bit deep color
- Built-in Side-band Signals Multiplexer with 5V tolerance for SDAx/SCLx pins
- I2C interface for flexible host control and GPIO saving.
- EDID bridging function for lower system BOM cost
- 5 operation modes with optional I2C Control and EDID Bridge features
- Pin-to-pin compatible to PS301 with CEXT external capacitor for voltage regulation
- Single 3.3V Power Supply, 80-pin TQFP RoHS Package
- 0°C to 70°C Operating Temperature Range
- ESD: Human Body Mode at 8 kV for all inputs, Machine Mode at 400 V, and Charged Device Mode at 2 kV

**APPLICATIONS**

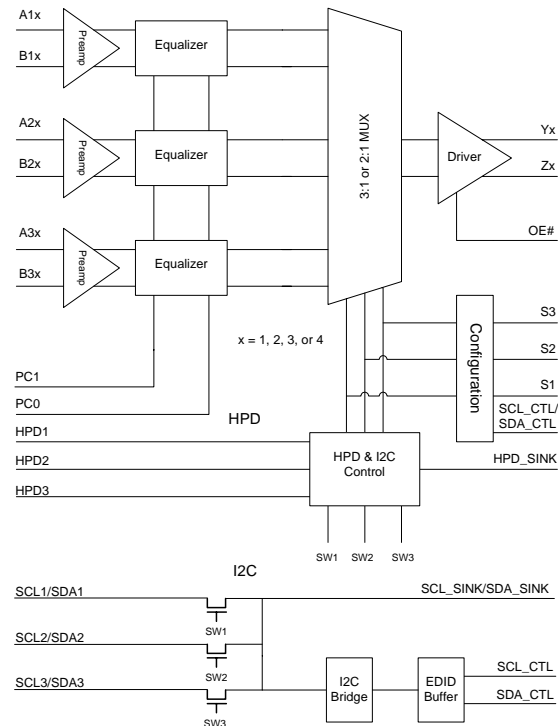
- Digital TV
- Digital Set-Top-Box
- A/V Receiver
- Digital DVR
- 3-to-1 or 2-to-1 HDMI/DVI Switch Box

**GENERAL DESCRIPTION**

PS321/PS221 is a consequent derivative of PS301/PS201, integrated 3-to-1, 2-to-1 HDMI/DVI switch to simplify system level design and reduce system level cost for applications requiring multiple HDMI/DVI input connectors and single output device in digital TV and other emerging digital appliances. Compared with PS301, it integrates 5 operation modes with optional I2C Control and EDID Bridge features.

TMDs inputs and corresponding I2C and HPD connection are selected by S1, S2, & S3(PS321 only) pins or by I2C control. I2C control pins are bi-directional and HPD control pins are uni-directional, SDAx/SCLx and HPD\_SINK are 5V tolerant I/O. Each TMDs channel can support data rate up to 2.7 Gbps with flexible cable equalization up to 16 dB. By supporting both DC and AC coupling, PS321/PS221 also enable DisplayPort (2.7 or 1.62 Gbps) switching function.

**FUNCTIONAL BLOCK DIAGRAM**



Receiver inputs are terminated with integrated active 50 Ω resistors connected to AVCC. The output is at high impedance state when OE# input is set at high state. PS321/PS221 provides flexible power management with power down and power saving modes.

The PS321/PS221 supports either fixed cable equalization with default setting of 10-dB at 1.65Gbps and 12-dB at 2.25Gbps receiver equalization, or programmable equalization from 0 to 15-dB/17-dB (1.65Gbps/2.25Gbps) by pin selection or I2C control registers.

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