As part of NXP’s industry-leading family of high-performance, robust DisplayPort-to-HDMI interface solutions, this high-speed device provides exceptional signal conditioning with low active and standby power consumption in systems that support HDMI1.4B (3G, 3D, 4K x 2K).

**Enhanced DP-to-HDMI connectivity for 3G, 3D, and 4K x 2K applications**

**KEY FEATURES**
- DP++ interface connectivity to host CPU/GPU
- TMDS signaling/operation up to 3.4 Gbps
- Configurable receive equalization to compensate for channel attenuation
- Resistor-adjustable output signal swing
- Integrated DDC ROM for HDMI dongles
- Low active power: 72 mW
- Very low standby power: 410 µW
- Application-friendly HVQFN32 package (5 mm x 5 mm)
- Industrial temperature range: -40 to 105 °C

**KEY APPLICATIONS**
- Notebook, desktop, and tablet PCs for 3G, 3D, and 4K x 2K formats
- Dongles and adapters
- Embedded systems
- Video and digital cameras, camcorders, and other portable systems

The NXP PTN3363 is a low-power, high-speed active level shifter that converts four lanes of low-swing AC-coupled differential input signals to DVI v1.0 and HDMI v1.4b compliant open-drain current-steering differential output signals. The device is capable of up to 3.4 Gbps per lane to support 36-bit deep color mode, 4K x 2K video formats, and 3D video data transport.

Each of the four lanes provides a level-shifting differential active buffer, with built-in equalization, to translate from low-swing AC-coupled differential signaling on the source side to TMDS-type DC-coupled differential current-mode signaling, terminated into 50 Ω to 3.3 V, on the sink side.

Additionally, the PTN3363 provides a single-ended active buffer for voltage translation of the HPD signal, from 5 V on the sink side to 3.3 V on the source side, and provides a channel with active buffering and level shifting of the DDC channel (consisting of a clock and a data line) between the 3.3 V source and 5 V sink. The DDC channel is implemented using active I2C-bus buffer technology that provides re-driving and level shifting.
The I2C buffer also disables the clock and data lines by isolating between the source and sink.

LOW-POWER ARCHITECTURE
The active level-shifting function used by the PTN3363 offers enhanced capabilities for signal conditioning and, at the same time, optimizes power consumption.

CLEAN HDMI OUTPUT
The PTN3363 reduces inter-symbol interference (ISI) and channel losses to deliver an HDMI output that meets HDMI compliance and achieves good system interoperability.

Ordering information
For questions, e-mail interface.support@nxp.com

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<th>Type number</th>
<th>Orderable part number</th>
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<th>Packing method</th>
<th>Minimum order quantity</th>
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<td>HVQFN32</td>
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