



## NXP low-power DP-to-VGA adapter PTN3355

# DP-to-VGA connectivity with best-in-class active and standby power

As part of NXP's industry-leading family of high-performance, robust DisplayPort-to-VGA adapters, this configurable device makes it easy to support legacy VGA interfaces while minimizing active and standby power consumption.

### KEY FEATURES

- ▶ VESA-compliant DisplayPort protocol converter
- ▶ DisplayPort HBR and RBR link rates
- ▶ Up to 2 DisplayPort lanes
- ▶ VSIS 1.2-compliant VGA output
- ▶ Analog VGA output up to pixel clock of 240 MHz
- ▶ Low active power: 200 mW
- ▶ Ultra-low standby power: 410  $\mu$ W
- ▶ Application-friendly HVQFN package
- ▶ Factory-upgradeable firmware
- ▶ Commercial temperature range: 0 to +85 °C

### KEY APPLICATIONS

- ▶ PC platforms: notebooks, desktop, tablet PCs
- ▶ Docking stations: PC and mobile platforms
- ▶ Dongles and adapters
- ▶ Embedded systems

The NXP PTN3355 is a low-power DisplayPort-to-VGA adapter with an integrated 1:2 VGA switch optimized for system applications. It converts a DisplayPort signal from the system chipset to an analog video signal that goes directly to the VGA connector.

The PTN3355 integrates a DisplayPort receiver, a high-speed triple video DAC and a 1:2 VGA switch that supports a wide range of display resolutions, from VGA to WUXGA. The PTN3355 supports one or two DisplayPort lanes operating at either 2.7 Gbps (HBR) or 1.62 Gbps (RBR) per lane.

The PTN3355 uses a 3.3 V power supply. Power consumption is 200 mW for video streaming at WUXGA resolution and 410  $\mu$ W in ultra low-power standby mode. The VGA output is powered down when there is no valid DisplayPort source data being transmitted. The PTN3355 also aids in monitor detection by performing load sensing on RGB lines and reporting sink connection status to the source.



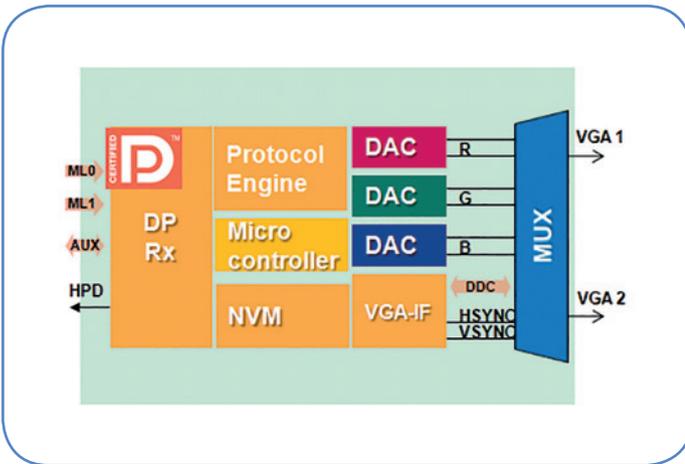
## EXTENSIVE PROGRAMMABILITY AND CONFIGURABILITY

The PTN3355 is easy to configure using GPIO pins and/or internal configuration registers. The internal registers can be configured in the customer factory to support specific requirements. Also, to support firmware upgrades during manufacturing, NXP offers a Flash-over-AUX utility for use with Windows-based applications and, for applications that don't use Windows, a Flash-over-DOS or Flash-over-I<sup>2</sup>C utilities.

## DEMONSTRATION PLATFORM

The PTN3355 DPVGA demo board is a reference design that can be connected to a video source, such as a PC, and a VGA display.

### PTN3355 DPVGA block diagram



### PTN3355 DPVGA demo board



## Ordering information

For questions, e-mail [interface.support@nxp.com](mailto:interface.support@nxp.com)

Type number	Orderable part number	Package	Packing method	Minimum order quantity	Temperature (T <sub>amb</sub> )
PTN3355BS <sup>(1)</sup>	PTN3355BSMP	HVQFN40	Reel 13" Q2/T3 *standard mark SMD dry pack	4000	0 to + 85 °C
PTN3355BS/FX <sup>(2)</sup>	PTN3355BS/FXMP	HVQFN40	Reel 13" Q2/T3 *standard mark SMD dry pack	4000	0 to + 85 °C

<sup>(1)</sup> PTN3355BS uses latest firmware version

<sup>(2)</sup> PTN3355BS/FX uses specific firmware version('X' = 1, 2, 3, etc... and changes according to firmware version)