

## iND87451

### DisplayPort to LVDS Converter

#### iND87451 Features

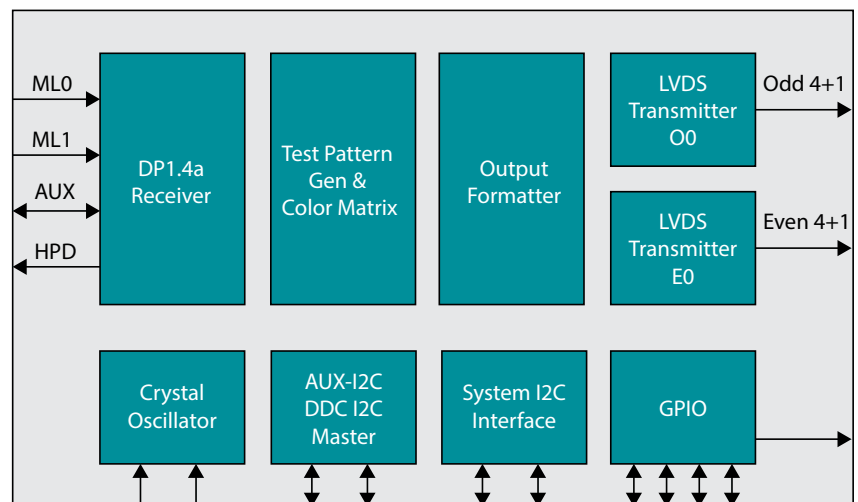
- DP1.4 to Dual LVDS-TX Converter IC
- Supports Link Rates of 1.62, 2.7, 5.4 Gbps
- Supports Single /Dual Link 150MHz /300MHz LVDS Output, VESA or JEIDA Formats
- Crystal-less Mode Operation
- 1920x1200 120Hz 6/8/10-bit Color
- Supports HDCP 1.3 with On-chip Keys
- Split Screen Function
- Operating Temperature: -40°C to 105°C
- AEC-Q100 Grade 2
- Package: 7x7mm 56-pin QFN w/EP

#### Applications

- Digital TV
- LCD monitor
- Mobile display
- Projector
- Automotive Infotainment

The iND87451 is a DisplayPort receiver IC for the reception of secure, high-bandwidth uncompressed digital audio-video signals targeted for applications such as Automotive infotainment, DTV, LCD monitor, projector, and other types of display systems. iND87451 is a VESA DP 1.4a and eDP compliant device, implementing a single link DisplayPort input port comprising two main lanes, auxiliary channel, and HPD. The device supports the standard HBR2 (5.4Gbps), HBR (2.7 Gbps) and RBR (1.62 Gbps) Link speeds. The higher bandwidth provides unique benefits to users over other commercial DP receivers for embedded applications by offering additional margin to support higher color depth, resolution, and refresh rate. For example, iND87451 supports FHD non-reduced blanking video (1080p 8-bit color per pixel) at 120 Hz applications. The advanced equalizer built in this device offers guaranteed performance over long reach cables. The auxiliary channel in iND87451 acts as a bidirectional communication link, supporting application-specific protocols such as MCCS, DDC, UART, IR, as well as the dedicated DisplayPort link training and device management functions.

The iND87451 supports RGB and YUV video color formats with color depth of 10, 8 and 6 bits. This device offers LVDS output interfaces configurable to map a wide range of display controller products. The Dual LVDS interface supports video signals up to 308 MHz pixel rate



#### Ordering Information

Part Number	Operating Temp.	Package
iND87451-AA	-40°C to +105°C	56 WQFN (7mm x 7mm)

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with flexible channel and lane swapping options. The iND87451 features the HDCP 1.3 content protection scheme with an embedded key for secure reception of digital audio-video content. In addition, it also supports the HDCP repeater function and, thus acts as an upstream receiver suitable for two-box TV and HDMI/DVI converter applications.

The iND87451 is configurable from an external host controller through I2C host interface. This IC also includes general-purpose inputs/outputs for controlling system components. The iND87451 features a color space converter (RGB to YUV and YUV to RGB) for flexible interface with external video processing devices.

Panel Power Sequencing and Backlight controls along with PWMI, PWMO functions are also supported.