

## MCDP28x0 DisplayPort1.2a to HDMI2.0 LSPCON

### ■ GENERAL DESCRIPTION

The MCDP28x0 is a power-optimized DisplayPort1.2a-to-HDMI 2.0 converter targeted for desktop/mobile PC motherboard-down applications and for DP or USB type-C adaptor (dongle, docking station) applications. This device functions as a level shifter with a jitter cleaner for TMDS signal from a dual mode DP (DP++) source or as an active DP to HDMI protocol converter.

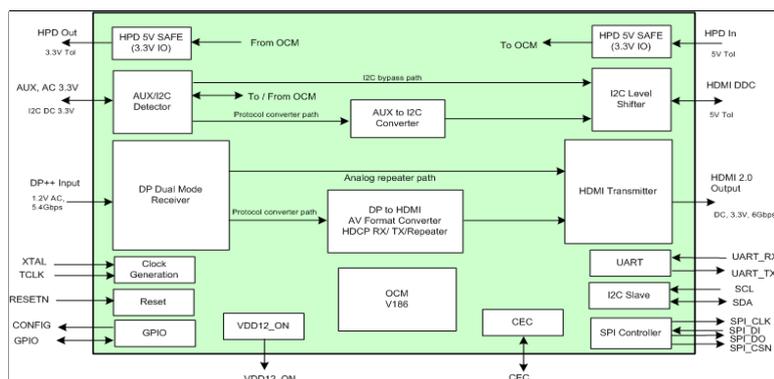
The upstream link receives DP input at HBR2 data rate over 4 lanes or AC-coupled TMDS signal up to 340 Mchar/s. The downstream HDMI link is HDMI 2.0 specification compliant supporting up to 600 Mchar/s. The MCDP28x0 supports Ultra High-Definition video formats, resolutions as high as 4096 x 2160@60 Hz with RGB/YCbCr video color formats and color depth up to 16 bpc within the DP1.2 and HDMI2.0 link bandwidth limits. In addition, this device supports HDR imaging and pixel encoding conversion from YCbCr444 to YCbCr420.

The MCDP28x0 is a highly secure device with anti-tampering design and complaints with standard content protection scheme for secure reception and transmission of audio-video content. The upstream link complaint with HDCP1.X or secure communication protocol and the downstream link complaint with HDCP1.x/HDCP2.2 content protection.

### ■ FEATURES

- DisplayPort1.2a receiver
- HDMI2.0 transmitter
- Level shifter operation with jitter cleaner up to 3.4Gbps/Ch
- Protocol converter up to 6.0Gbps/Ch
- Max video resolution 4K2k60Hz
- High Dynamic Range (HDR) imaging
- Steroscopic 3D forwarding
- Horizontal blanking expansion (CVT to CEA timing conversion)
- SCDC read request handling
- CEC tunneling over DP AUX channel
- HDCP1.x/2.2 content protection
- Power consumption: 100mW in LS; 412mW in PCON, 0.1mW standby
- 64 LFBGA (7mm x 7mm) package

### ■ BLOCK DIAGRAM



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