

Paugge

DP14HD20A-ADP

DisplayPort1.4 to HDMI2.0a Adapter



Datasheet

Rev. D

Paugge Proprietary Information

Features

- DisplayPort® (DP) ver. 1.4 receiver
 - Up to 5.4Gbps Link rate supporting HBR2/HBR/RBR modes
 - 1, 2, or 4 lanes configuration
 - Programmable receiver equalization
 - Single Stream
 - AUX CH 1 Mbps
 - 3.3V HPD_OUT
 - Link Training (LT) enhancements as in DP1.4 specification
 - Video Stream Handling
 - Up to 600MHz dual pixel path and 16bpc
 - RGB/ YCbCr 444/422/420 pixel format
 - Horizontal expansion of VESA CVT to CEA timings as per DP1.4 specification
 - DPCD and CEC
 - Supports DPCD data structure revision 1.4 as per DP1.4 specification
 - Supports CEC tunneling over AUX
 - DP to HDMI Stereoscopic 3D Transport
 - Frame Sequential to Stacked Top-Bottom Conversion
 - Pass-through of other 3D formats
 - Audio Stream handling
 - LPCM and Compressed Audio encoding formats
 - Max Audio sample rate of 192KHz x8 Channel or 768KHz x2 Channel
- HDMI ver. 2.0a transmitter
 - 600 MHz maximum TMDS character clock
 - DC-coupled outputs with source termination
 - TMDS character-clock divide_by_4 Mode
 - Scrambling over HDMI2.0a
 - Programmable edge rate control
 - Programmable pre-emphasis control
 - Deep color up to 16 bits per color
- High Dynamic Range support (Static and Dynamic HDR)
- 3D video timings
- CEC support – snooping, tunneling
- HPD_IN handling
- SCDC read request handling
 - Polling enabled for HDMI sinks not supporting read requests
- Video Input Processing (up to 6Gbps)
 - Color space conversion
 - 10 bits per color input width
 - 12 bits per color output width
 - 16 bits per color pass through
 - Programmable coefficient 3x3 matrix
 - Programmable input offset
 - Programmable output offset
 - Programmable output clipping levels
- Chroma Down Sampling
 - 5-tap H & V FIR filters with programmable coefficients
 - 12 bits per color input width
 - 12 bits per color output width
 - YCbCr444 to YCbCr420 conversion
 - YCbCr444 to YCbCr422 conversion
 - YCbCr422 to YCbCr420 conversion
 - Bypass chroma down-sampling for YCbCr420 input over DP Link
- Max video resolution and color depth on HDMI TX output
 - 4Kp60Hz, RGB/YCbCr444, 8 bpc
 - 4Kp60Hz, YCbCr422 up to 12 bpc
 - 4Kp60Hz, YCbCr420, up to 16 bpc
 - 4Kp30Hz, RGB/YCbCr444, up to 16 bpc
- Audio stream forwarding from DP RX to HDMI TX
 - Up to 8-ch, 192 kHz, 24 bps LPCM audio, AC3, DTS, Dolby-HD
 - 2-ch, 768 kHz 24 bps HBR audio
- HDCP support
 - HDCP1.3 to HDCP1.4 Repeater function
 - HDCP2.2 to HDCP1.4 Repeater function

- HDCP2.2 to HDCP2.2 Repeater function
- Read-protected embedded HDCP keys
- Enhanced security
 - Encrypted on-chip key storage
 - Security signed application firmware
 - Secure boot-up procedure
 - Debug ports disabled in production
- Metadata handling
 - HDMI TX DVI/HDMI mode setting (DPCD register)
 - YCbCr444-420 conversion (DPCD register)
 - IEC60958 BYTE3 Channel Status overwrite
 - CEA861F INFOFRAME generation
 - CEA861.3 HDR and Mastering InfoFrame as per DP1.4 specification
- Device configuration options
 - 8Mbit SPI flash for firmware binary image storage
 - AUX CH, I2C host interface
- Internal video pattern generator
- Configurable through DPCD registers

EMI reduction support

- Spread spectrum for DP input
- Scrambler for DP input and HDMI2.0a output
- Low power operation
 - 570 mW in protocol converter operation
 - 11 mW sleep mode operation
 - 4 mW in Connected Standby operation
- ESD specification
 - ESD: +/-2 KV HBM, 500 V CDM
 - ESD: +/-6.5 KV HBM connector facing pins
- Package
 - (15 x 7 X 3 Cm)
- Power supply voltages
 - 3.3 V I/O; 1.2 V core