

HDMI 2.0 IP

Enables High speed interface compliant with HDMI 2.0 standard

Overview

HDMI 2.0 IP provides transmit/receive functions of HDMI 2.0 standard for Altera FPGA. Its maximum transfer rate is 18 Gbps enabling to transmit and receive up to RGB 24 bit 4k2k@60p video. Users can bring their HDMI 2.0 compliant products to market very quickly and easily.

Features

- Enables HDMI 2.0 transmission and reception with Altera FPGA
- 18 Gbps maximum transfer rate, supports RGB 24 bit 4k2k@60p transmit and receive (however, depends on the FPGA used)
- HDMI operation confirmed by the third-party compliance test.

Specifications

- Supports DVI Mode
- Supports Deep Color (30 bit/36 bit/48 bit) Mode
- Supports Display Data Channel (DDC), Status and Control Data Channel (SCDC) control
- Supports Hot Plug Detect, +5V Power Drive control
- Supports Audio

*1: The function below is not supported.
Content Protection

*2: The functions below require to be provided outside of the IP.
Consumer Electronics Control (CEC)
HDMI Ethernet and Audio Return Channel (HEAC)

Supported Devices

- Cyclone V
- Arria V/10
- Stratix V

(* Please contact Macnica sales department for information about other devices.)

Deliverables

- Encrypted RTL (Verilog HDL)
- Reference design
- Simulation environment (For ModelSim)
- User's manual, Reference manual, Simulation manual

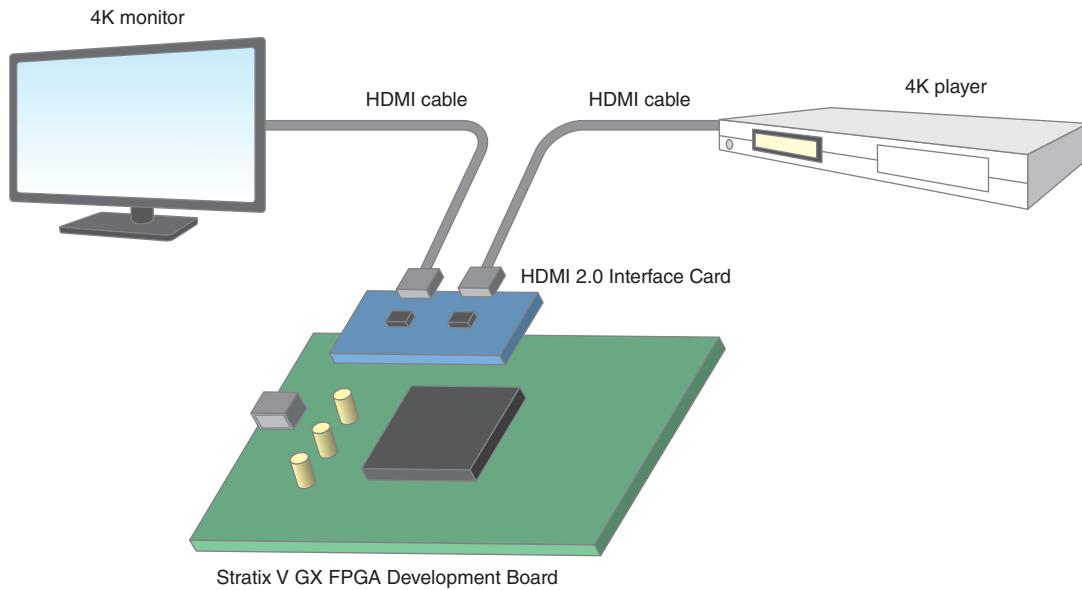
Device Resource Utilization

Direction	Device	Symbols per Clock	Resource			
			ALMs	Register	Block Memory (M20K or M10k)	DSP Block
TX	Cyclone V GX	2	1,808.0	3,560	9	0
		4	2,578.0	4,026	21	0
	Arria V GX	2	1,887.0	3,561	9	0
		4	2,715.0	4,011	22	0
	Stratix V GX	2	1,873.0	3,493	9	0
		4	2,648.0	4,579	15	0
	Arria 10 GX	2	1,939.0	3,487	9	0
		4	2,672.0	4,603	15	0
RX	Cyclone V GX	2	3,469.0	5,221	7	0
		4	5,690.0	7,996	10	0
	Arria V GX	2	3,453.0	5,216	7	0
		4	5,710.0	8,054	10	0
	Stratix V GX	2	3,395.0	5,038	7	0
		4	5,670.0	7,898	10	0
	Arria 10 GX	2	3,447.0	5,072	7	0
		4	5,728.0	7,821	10	0

* The values in the above table are based on an implementation example. There may be some variation depending on the user's system configuration.

Evaluation Environment

Video from a 4K player is received by the receiver IP, and the video is output to a 4K monitor from the transmitter IP.

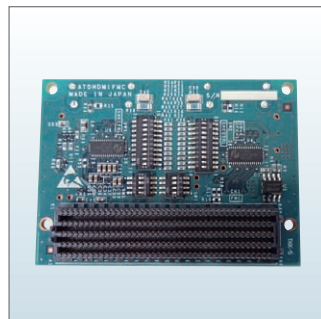


Category	Product Name	Vendor
Base Board	Stratix V GX FPGA Development Board	Altera
Daughter Card	HDMI 2.0 Interface Card*	Mpression

* Mpression HDMI interface cards are also on sale. For more information, please contact Macnica's sales department.



HDMI 2.0 Interface Card FMC Version



HDMI 2.0 Interface Card HSMC Version

