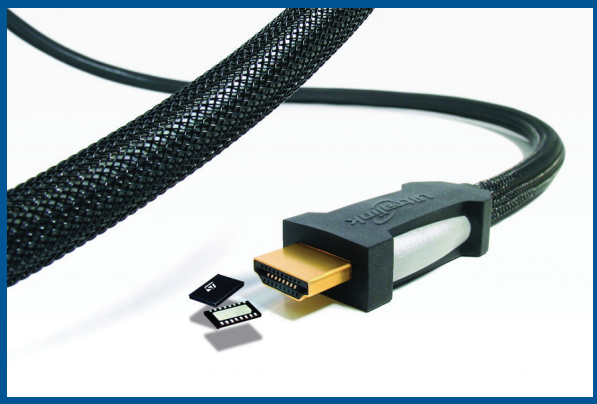
The ultimate HDMI control-link buffer

New HDMI cuts time to market for HD set-top boxes



The HDMI2C1 IC combines mandatory control-signal conditioning and ESD protection for HDMI-compliant products.
This new product simplifies the design of HDMI-compliant connections for high-definition set-top boxes such as Blu-ray players, game consoles and satellite decoders.
The new HDMI2C1-5DIJ assures designers of meeting 100% of the HDMI specification version 1.3, and is even compatible with version 1.4 if Ethernet is not used.
In addition, the device occupies up to 70% less board space than an equivalent network of discrete components for ESD protection, boosting, and level shifting of HDMI control signals.

The HDMI2C1-5DIJ is a companion for ST's HDMIULC6-4SC6, which protects HDMI video/audio signal lines. It has an ultra-low line capacitance of 0.6 pF and a bandwidth greater than 5 GHz, allowing designers to implement HDMI-compliant ESD protection while also maximizing signal integrity. Together, these two devices help designers achieve HDMI-compliant interfaces for high-definition equipment built using ST's STi5xxx or STi7xxx HD decoder ICs.

Key features

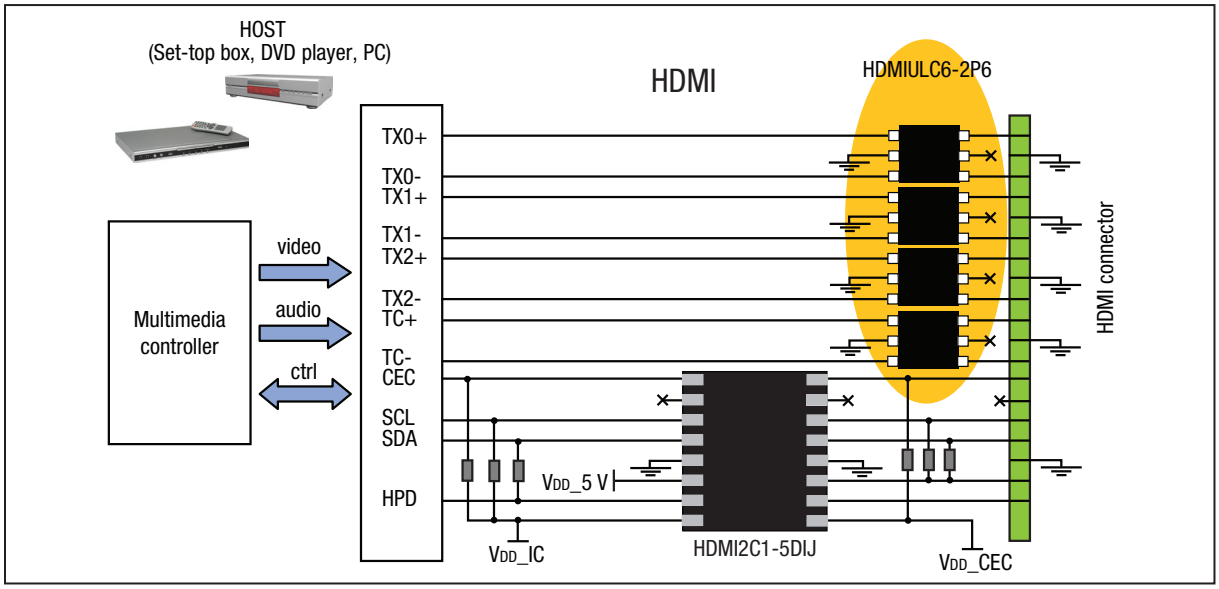
- HDMI 1.3 compliant from -40 to 85 °C
- CEC, DDC, 5 V and HPD 8 kV contact ESD protection
- Integrated I²C bidirectional reshaping circuit and level shifter
- Integrated CEC bidirectional level shifter with dV/dt limiter
- Supports direct connection to low-voltage HDMI ASICs (down to 1.8 V)
- Backdrive current protection on all I/O pins
- HDMI short-circuit and overcurrent protection on 5 V output
- Long HDMI cable drive support
- Package: QFN 5 x 4, 16 leads

Key benefits

- Most stringent HDMI standard compliance guaranteed at system level
- Full protection of ultra-sensitive HDMI ASICs
- Optimized HDMI control-signal shapes
- Signal booster for long HDMI cable support
- Companion chip for HDMIULC6-xxx6 ultra-large bandwidth ESD protection for TMDS links
- Companion chip for ST's HDMI HD decoders
- Referenced in STi7111-SAT-MB-V1.2-011 reference design from ST

Targeted applications

- Consumer and computer electronics
- HD set-top boxes, DVD/ Blu-ray players
- PC graphics cards



Channel-dedicated HDMI protection

In addition to consolidating high-definition video and audio in a single, compact cable (carried through 3 TMDS lines), HDMI also includes two control channels. The DDC bus (display data channel) automatically configures the signal for optimum image quality. The CEC bus (consumer electronic control) links connected devices to support value-added features such as automatic standby or control of multiple connected devices via a single remote control.

The signal and control channels all require ESD protection to meet the HDMI specification, but the signal-protection devices (on TMDS lines) must also have extremely low capacitance to avoid distorting the high-speed HD video. By providing separate ICs for signal-protection and control-channel duties, optimized for each task, ST allows designers to simultaneously maximize performance, save PC-board space, and demonstrate HDMI compliance for new products.

Product table

HDMI2C 1 - 5 DIJ

HDMI and I²C compliant links

HDMI port type
1: source ports

Package
DIJ: QFN 5 x 4, 16-lead

Number of protected links

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