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Enhanced ESD protection and EMI filters for audio/video interfaces

Advanced ultra-low capacitance protection and high-attenuation audio filters



In the past couple of years, the multimedia capabilities of mobile phones greatly progressed. They will continue to evolve for many years as processing performance continues to increase rapidly and the cost of adding complex multimedia functionality decreases. High-definition displays and cameras are already part of multimedia phones. Now enhanced gaming, MP3 and TV on mobile are driving high-quality audio output and high-resolution video output interfaces. Most probably, the coming years will see mobile handsets becoming portable multimedia set-top boxes.

With ASD and IPAD™ devices, STMicroelectronics' experience is sustaining the evolution towards more multimedia capabilities by simplifying interface implementation in today's disrupted environments with the widest range of audio/video ESD and EMI guards.

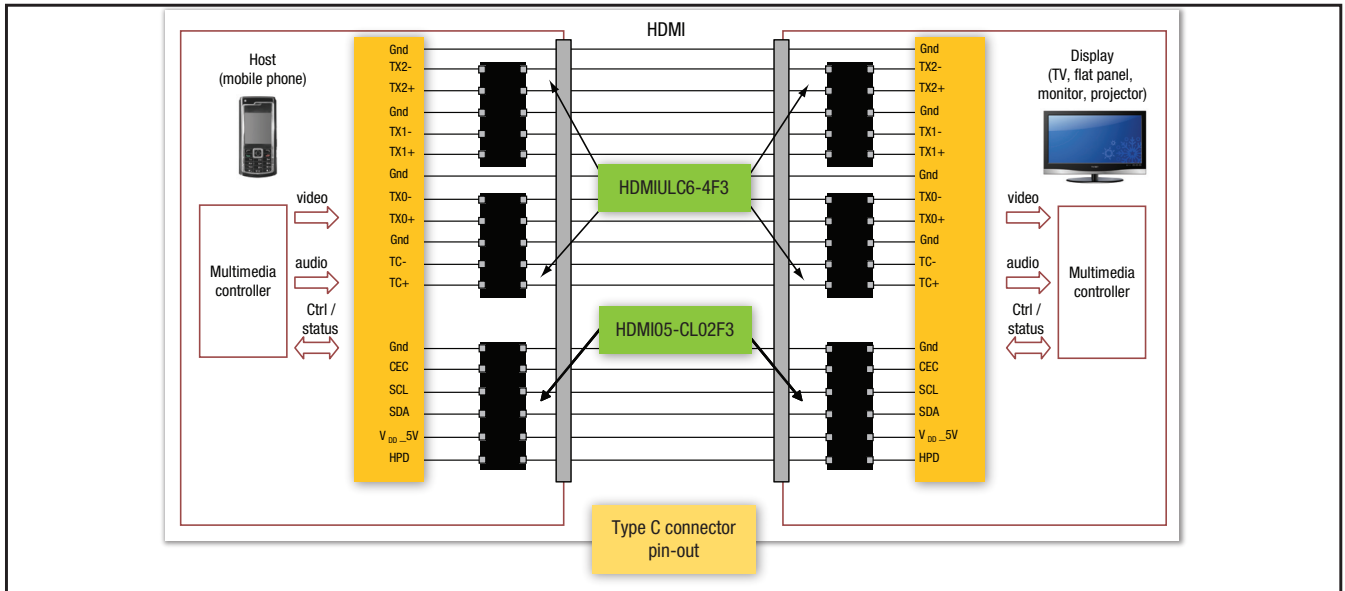
Key features and benefits

- EMIF02-MIC06F3
 - 2-line symmetrical low-pass filter
 - Low cut-off frequency thanks to high-density capacitor integration (4 nF)
 - - 60 dB attenuation from 10 MHz to 3 GHz
 - High efficiency in ESD suppression IEC 61000-4-2 level 4
 - Very low PCB space: <math>< 1.5 \text{ mm}^2</math>
 - Very thin package: 0.65 mm
 - High reduction of parasitic elements through integration and wafer level packaging
- HDMIULC6-4F3
 - 4-line ESD protection for TMDS lines
 - Ultra low line capacitance: 0.7 pF
 - Flow-through layout for type C HDMI connector
 - Very low leakage current: 3 nA.
 - Low PCB space – 1.76 mm² footprint
 - High efficiency in ESD suppression IEC 61000-4-2 level 4
- EMIF01-TV02F3
 - User-customizable filtering solution with external inductor
 - 8 MHz video bandwidth
 - Very high attenuation at 27 MHz
 - Ultra-low standby power consumption, ideal for portable applications
 - Accurate 75 $\Omega \pm 5\%$ impedance matching for current-output video DENC
 - High efficiency in ESD suppression IEC 61000-4-2 level 4
 - High reliability offered by monolithic integration
- HDMI05-CL02F3
 - Control-line ESD protection
 - Low line capacitance: 12 pF max.
 - Integrates pull-down resistor on HPD and pull-up resistors on CEC, SDA and SCL lines
 - Low PCB space – 1.44 mm² footprint
 - High efficiency in ESD suppression IEC 61000-4-2 level 4

Targeted applications

- Headsets and internal microphones
- Analog CVBS interfaces
- HDMI ports up to 3.2 Gbit/s
- Digital serial interfaces
- MIPI D-PHY interfaces

HDMI block diagram



EMIF02-MIC06F3 block diagram

