



# Crescendo II SoundBar SoC

## Product Brief

The **Crescendo II SoundBar** is an SoC targeted for TV soundbar applications.

To enable the lowest system BOM cost, the Crescendo II SoundBar employs a unified memory architecture and integrates all TV soundbar processing functions in a 128-pin Low Profile Quad Flat Pack (LQFP) package.

The Crescendo II SoundBar's core A/V decoder is built on the ESS proprietary dual CPU Programmable Multimedia Processor (PMP) core consisting of 32-bit RISC and 64-bit Media Processor that deliver the best soundbar feature set. In addition, the Crescendo II SoundBar integrates an audio postprocessing DSP for sound effect processing such as virtual surround or stereo expansion.

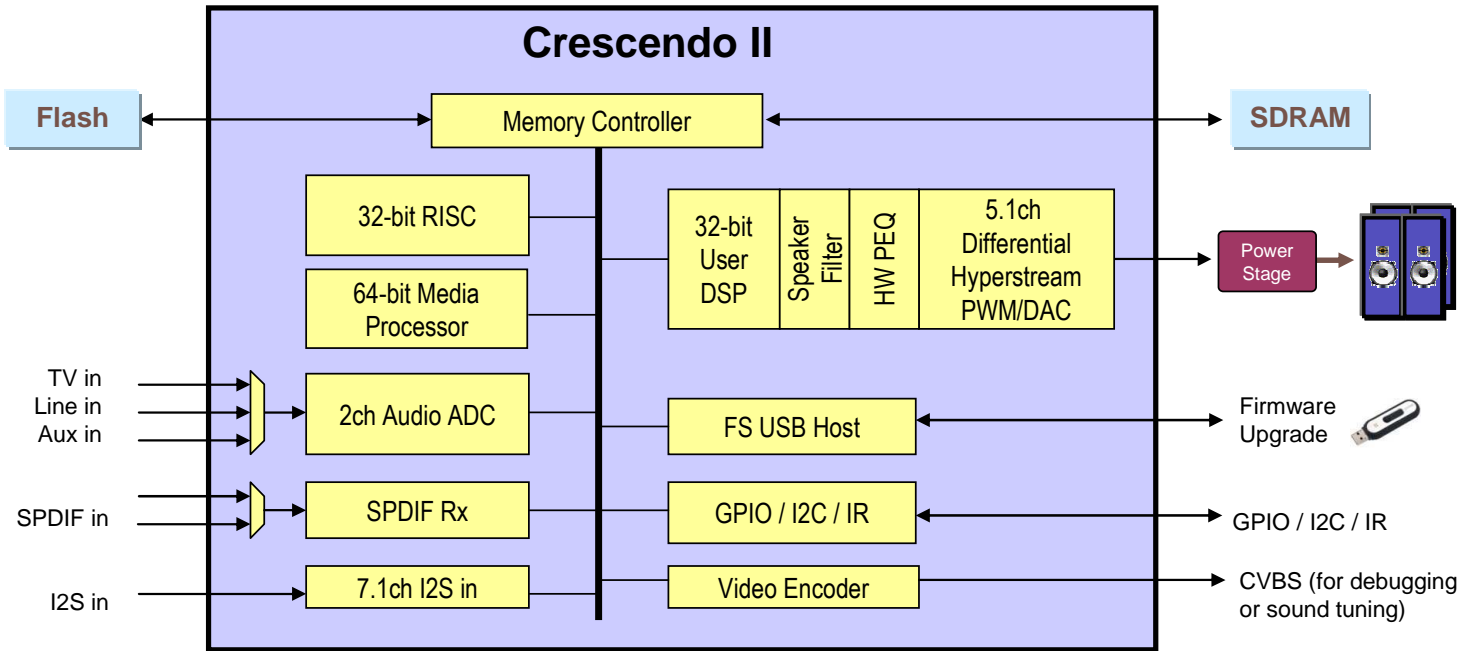
The Crescendo II SoundBar integrates a hardware parametric equalizer for speaker equalization, a 5.1ch Hyperstream™ PWM or D/A converters to deliver the best sound via digital or analog power amplifiers, a 2-input SPDIF receiver, a 3-input audio ADC for connection to line-in sources an 8-channel I2S input for connection to HDMI repeater or Blu-ray processor, remote and GPIO handlers for buttons and LEDs, and a FS USB 2.0 host controller for firmware upgrade at the field or music playback from thumb drives or iPod.

FEATURE	BENEFIT
Highest integration of all audio functions in TV soundbar	Lowest system BOM cost
Patented Hyperstream™ PWM/DAC <ul style="list-style-type: none"> <li>Enhanced 100dB DNR PWM/DAC</li> <li>5.1ch output in PWM/DAC/I2S mode</li> <li>Hardware Parametric Equalizer</li> </ul>	Eliminate external DSP <ul style="list-style-type: none"> <li>Best sound stage and clarity</li> <li>Drive digital amplifier &amp; Subwoofer</li> <li>Realistic audio from tiny speaker/enclosure</li> </ul>
Comprehensive Sound Bar Processing <ul style="list-style-type: none"> <li>Decode MP3/DD/DTS, etc.</li> <li>Sound effects</li> <li>Dedicated user programmable DSP</li> </ul>	Eliminate external DSP <ul style="list-style-type: none"> <li>Playback all popular audio formats</li> <li>Virtual Surround Speaker, AV sync etc.</li> <li>Add-on or custom sound effects</li> </ul>
Versatile Audio Input <ul style="list-style-type: none"> <li>3-input Stereo ADC</li> <li>2-input SPDIF receiver</li> <li>8-ch I2S input</li> </ul>	Eliminate external SPDIF receiver & ADC <ul style="list-style-type: none"> <li>CD quality analog audio input</li> <li>Digital audio input</li> <li>Connect to HDMI repeater or BD processor</li> </ul>
System <ul style="list-style-type: none"> <li>Remote and GPIO handler</li> <li>I2C master</li> <li>FS USB 2.0 Host</li> </ul>	<ul style="list-style-type: none"> <li>Eliminate external microcontroller</li> <li>Control/monitor external IC components</li> <li>Firmware upgrade, playback from iPod or thumbdrives</li> </ul>

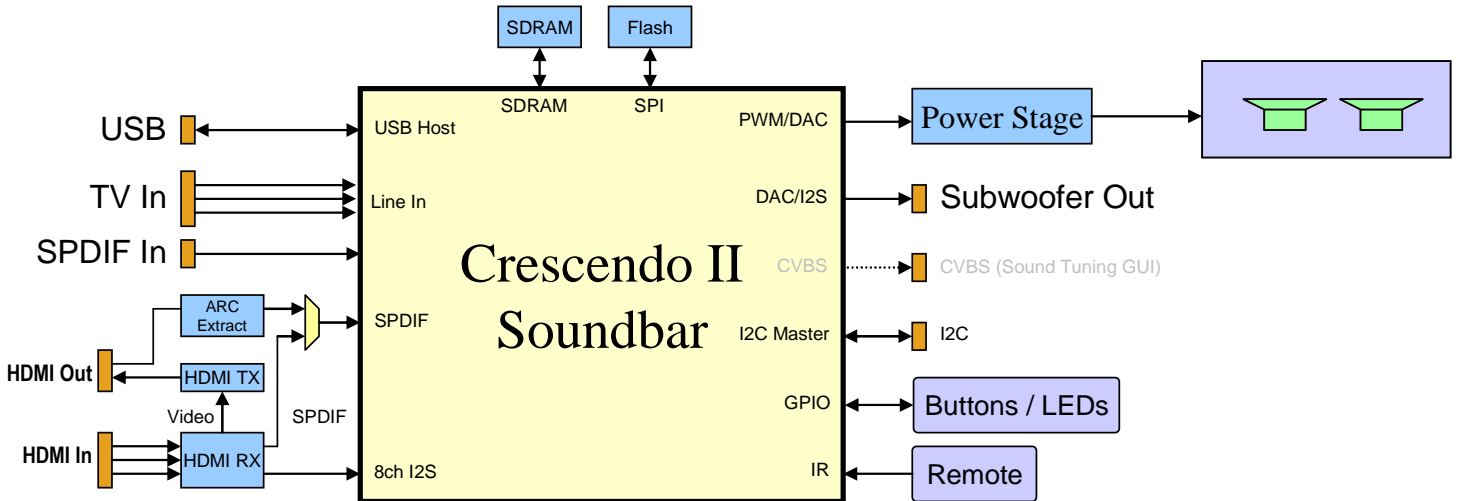


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## FUNCTIONAL BLOCK DIAGRAM



## APPLICATION DIAGRAM



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