



# Phoenix III Premier DVD/HTiB SoC

## Product Brief

The Phoenix III Premier is a DVD/HTiB processor targeted for DVD home-theater receivers, soundbars and mini-component systems applications.

The Phoenix III Premier'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 DVD/HTiB feature set. In addition, the Phoenix III Premier integrates an audio postprocessing DSP for sound effect processing such as virtual surround or stereo expansion.

The Phoenix III Premier integrates a hardware parametric equalizer for speaker equalization, a 8-channel Hyperstream™ PWM or D/A converters to deliver the best sound via digital or analog power amplifiers, a 3-input SPDIF receiver for optical, coaxial and HDMI Audio Return Channel inputs, a 3-input audio ADC for connection to line-in sources, a MIC ADC for Karaoke microphone input, remote and GPIO handlers for buttons and LEDs, a HS USB 2.0 host controller for music playback from thumb drives or iPod, and a core voltage controller with temperature sensor for advanced power management.

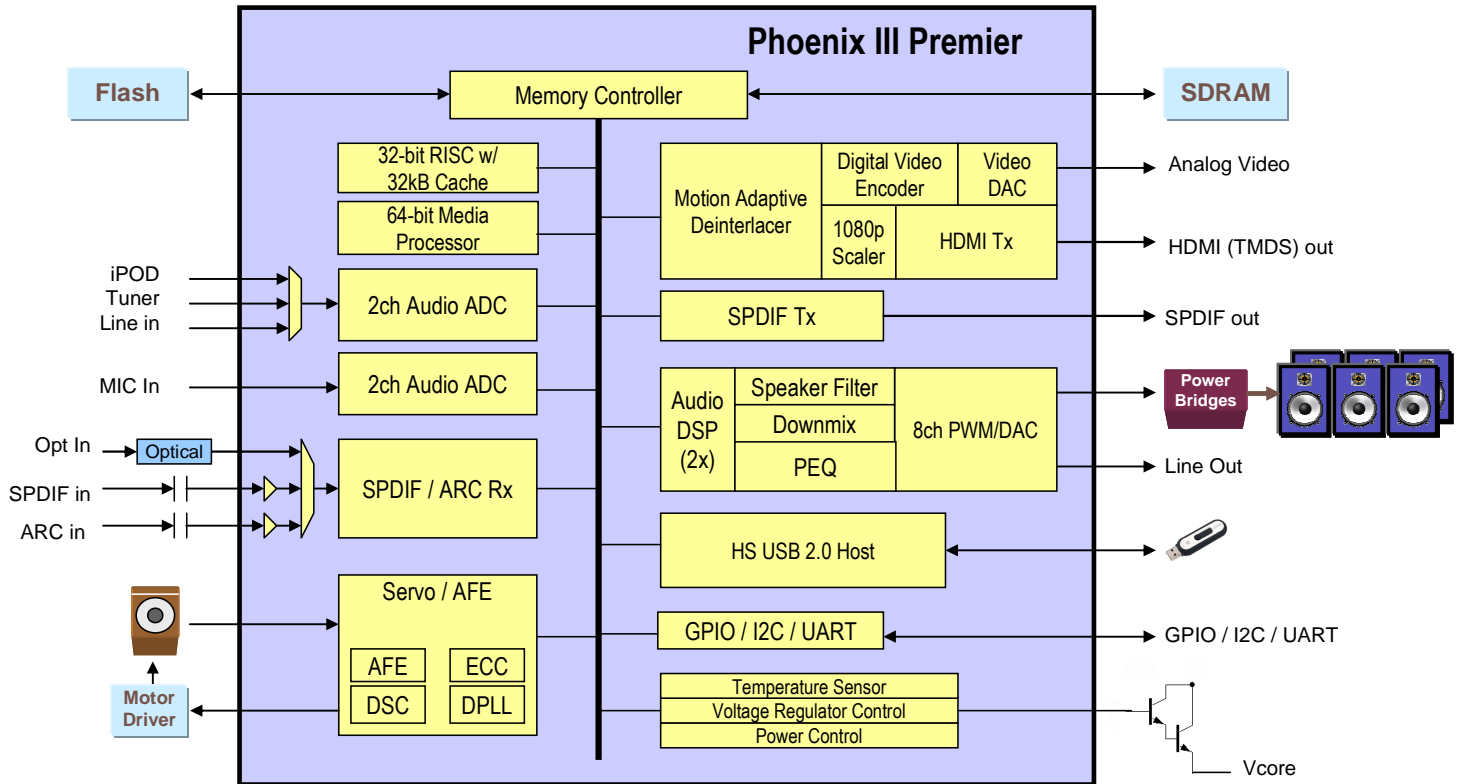
For lowest system BOM cost, the Phoenix III Premier employs a unified memory architecture and integrates all DVD and home theater audio processing functions in a 216-pin Low Profile Quad Flat Pack (LQFP) package.

FEATURE	BENEFIT
Highest integration for DVD home theater receivers and soundbars	Lowest system BOM cost
Field proven DVD/HTiB Decoder Core <ul style="list-style-type: none"> <li>CD/VCD/DVD/DivX/MP3/WMA Decoder</li> <li>5th generation DVD/CD Servo/AFE</li> <li>HS USB 2.0 Host Controller</li> </ul>	<ul style="list-style-type: none"> <li>Playback all popular A/V formats</li> <li>Superior media compatibility &amp; playability</li> <li>Smooth media playback from thumb-drives</li> </ul>
Video Out <ul style="list-style-type: none"> <li>HDMI transmitter w/CEC</li> <li>Motion Adaptive Video Deinterlacer</li> <li>1080p hardware scaler</li> <li>Analog video out</li> </ul>	<ul style="list-style-type: none"> <li>Eliminate external HDMI transmitter &amp; CEC uC</li> <li>Superior video quality</li> <li>Compatible with 1080p HDTV</li> <li>Compatible with analog TV</li> </ul>
Audio Post-processing <ul style="list-style-type: none"> <li>2x Audio DSP</li> <li>Hardware Speaker Filters &amp; Downmix</li> </ul>	<ul style="list-style-type: none"> <li>Customizable sound effects</li> <li>Reduce CPU loading</li> </ul>
Audio Out <ul style="list-style-type: none"> <li>6ch PWM/DAC</li> <li>2ch DAC</li> </ul>	<ul style="list-style-type: none"> <li>Field proven, best-in-class Class D controller</li> <li>Downmix Stereo output</li> </ul>
Audio In <ul style="list-style-type: none"> <li>SPDIF receiver w/ 3-input MUX</li> <li>Stereo ADC w/ 3-input MUX</li> <li>MIC ADC with digital echo mixer</li> </ul>	<ul style="list-style-type: none"> <li>Connect to optical, coax and HDMI ARC inputs</li> <li>Eliminate external audio ADC</li> <li>Eliminate MIC ADC &amp; Echo chip</li> </ul>
Core voltage controller <ul style="list-style-type: none"> <li>Voltage Regulator Control</li> <li>Temperature sensor</li> </ul>	<ul style="list-style-type: none"> <li>Replace external regulator with transistor</li> <li>Robust operation at any temperature</li> </ul>

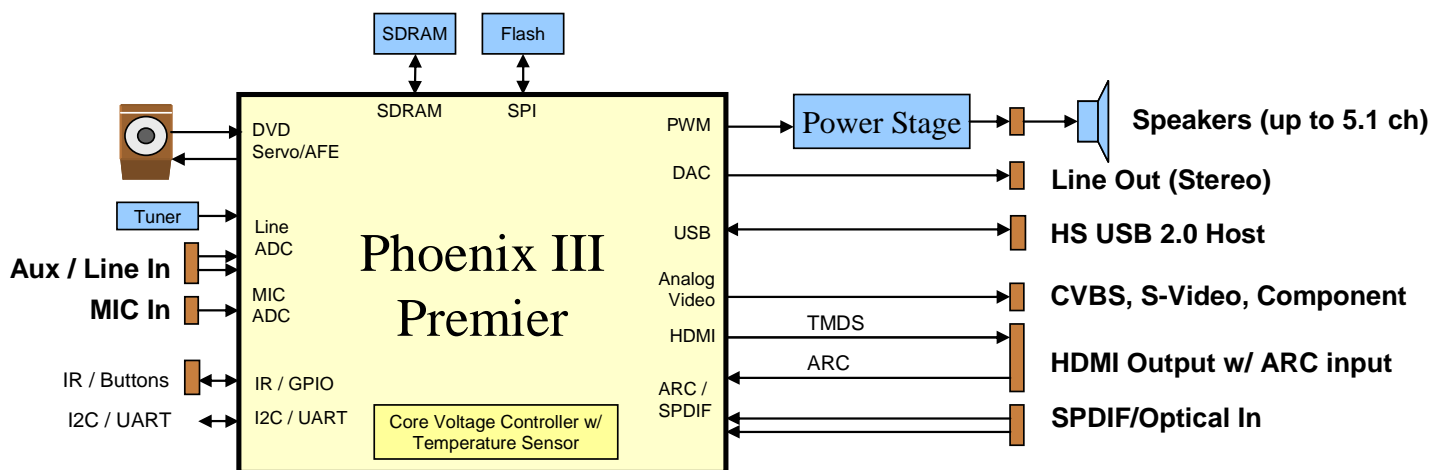


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## FUNCTIONAL BLOCK DIAGRAM



## APPLICATION DIAGRAM



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