



Ensemble II SoC

Product Brief

The **Ensemble II** SoC is targeted for BD home theater and TV soundbar applications.

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

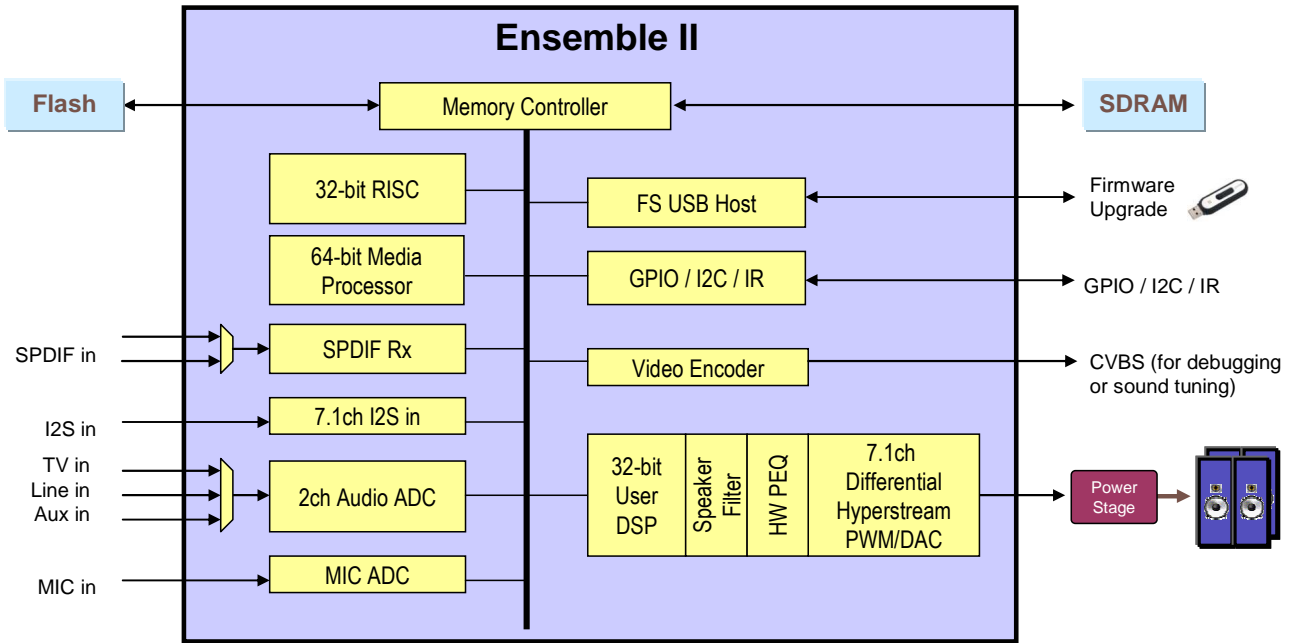
The Ensemble II SoC's core A/V decoder is built on the ESS proprietary dual CPU Programmable Multimedia Processor (PMP) core consisting of 32-bit RISC and 64-bit Media Processor that deliver the best home theater and soundbar feature set. In addition, the Ensemble II SoC integrates an audio postprocessing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

The Ensemble II SoC integrates a hardware parametric equalizer for speaker equalization, a 7.1ch 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, a stereo MIC ADC for connection to microphones, 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.

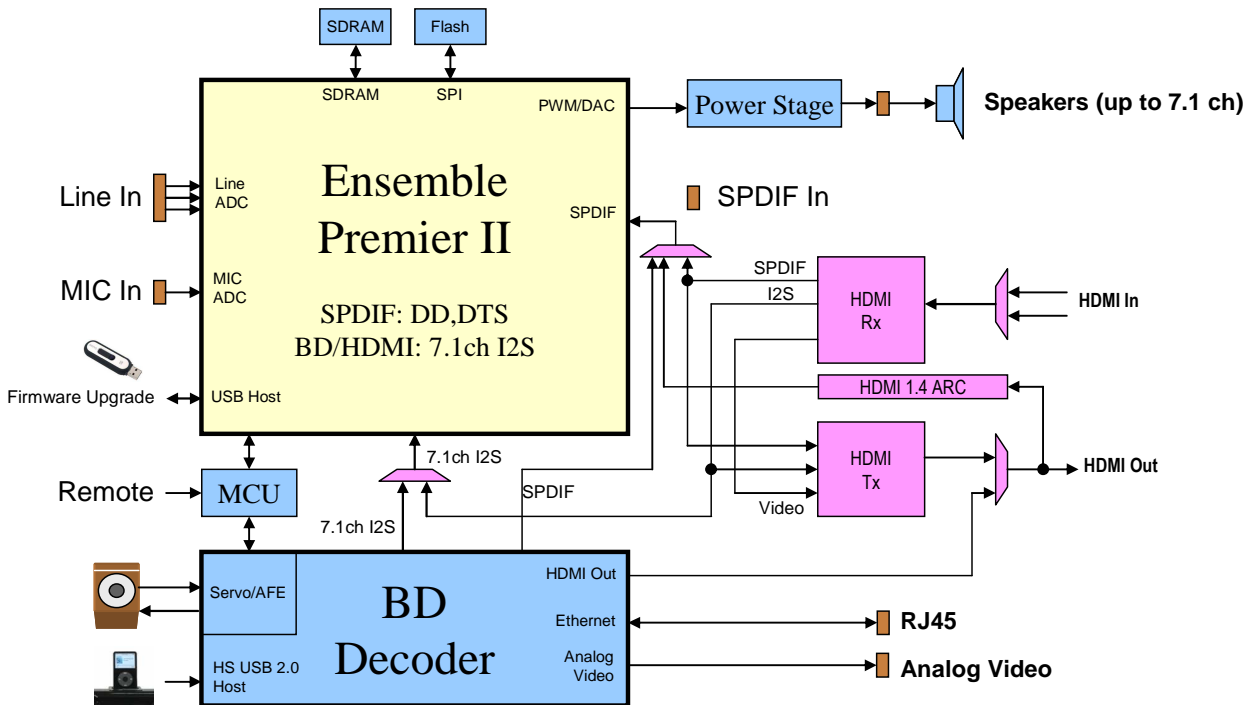
FEATURE	BENEFIT
Highest integration of all audio functions in BD home theater and TV soundbar	Lowest system BOM cost
Patented Hyperstream™ PWM/DAC <ul style="list-style-type: none"> Enhanced 100dB DNR PWM/DAC 7.1ch output in PWM/DAC/I2S mode Hardware Parametric Equalizer 	Eliminate external DSP <ul style="list-style-type: none"> Best sound stage and clarity Drive digital amplifier & Subwoofer Realistic audio from tiny speaker/enclosure
Comprehensive Sound Bar Processing <ul style="list-style-type: none"> Decode MP3/DD/DTS, etc. Sound effects Dedicated user programmable DSP 	Eliminate external DSP <ul style="list-style-type: none"> Playback all popular audio formats Virtual Surround Speaker, AV sync etc. Add-on or custom sound effects
Versatile Audio Input <ul style="list-style-type: none"> 3-input Stereo ADC Stereo MIC ADC 2-input SPDIF receiver 8-ch I2S input 	Eliminate external SPDIF receiver & ADC <ul style="list-style-type: none"> CD quality analog audio input Microphone input for Karaoke applications Digital audio input Connect to HDMI repeater or BD processor
System <ul style="list-style-type: none"> Remote and GPIO handler I2C master FS USB 2.0 Host 	<ul style="list-style-type: none"> Eliminate external microcontroller Control/monitor external IC components Firmware upgrade, playback from iPod or thumbdrives



FUNCTIONAL DESCRIPTION



APPLICATION DIAGRAM



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