



ESS Technology, Inc.

Phoenix II Series HD Enhanced DVD Processor Product Brief

OVERVIEW

The Phoenix™ II ES8390/ES8391 family of HD Enhanced DVD processors is a 2nd generation solution built upon ESS's highly successful Phoenix™ series of single-chip DVD controllers.

P/N	Description	Package	Analog HD (up to 1080i)	HDMI output (up to 1080p)
ES8390	Phoenix II HD Enhanced Processor	176-LQFP	√	×
ES8391	Phoenix II HD Enhanced Processor with HDMI support	216-LQFP	√	with ES7108
ES7108	Phoenix II Companion 1080p Video Scaler with built-in HDMI Transmitter	80-LQFP	×	√

The Phoenix™ II integrates a reliable front-end servo/ECC controller with a proven backend that supports standard DVD decoding with options for DivX® Home Theater playback, HDMI transmitter and Class D power bridges. A USB 2.0 FS host controller is also included for thumb drive connectivity.

The Phoenix™ II incorporates advanced video enhancement features such as de-interlacing, up-scaling and an HDTV encoder that can display JPEG pictures or up-converted video at 720p/1080i resolution.

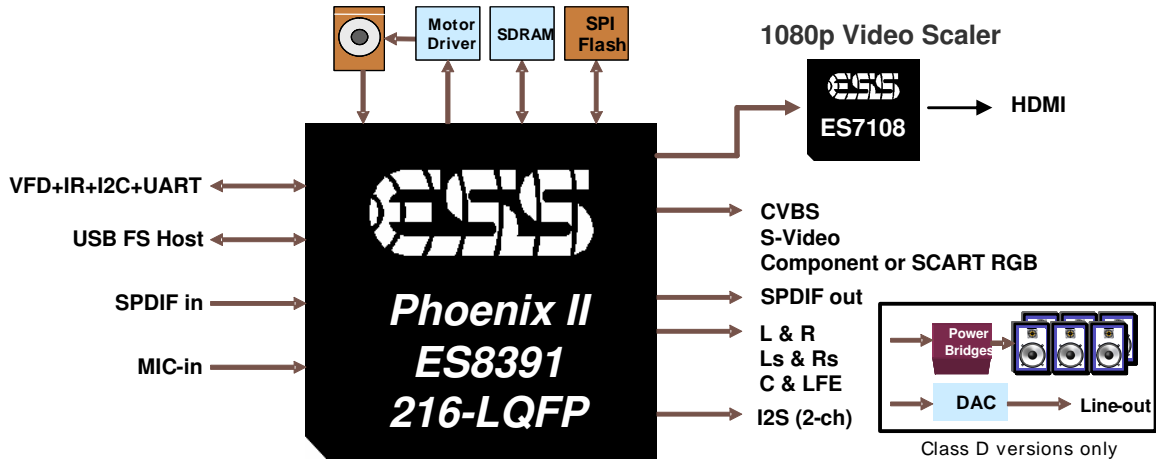
Together with the ES7108 Video Scaler companion, the Phoenix™ II ES8391 also supports HDMI output with the emerging 1080p scaler up-conversion.

KEY FEATURES

Feature	Benefit
Video <ul style="list-style-type: none"> 6ch Video DAC HD Video Encoder SD→HD scaler HD JPEG Divx HTP option 1080p HDMI option via ES7108 	<ul style="list-style-type: none"> Separate output for CVBS, S and Component Analog 720p/1080i output without HDMI for HD JPEG Up-conversion of video content to HD Display JPEG pictures in HD resolution Display DivX HTP video at full screen Support 1080p up-conversion via companion ES7108 Video Scaler with integrated HDMI transmitter
Audio <ul style="list-style-type: none"> Stereo ADC 6ch Audio DAC 6ch PWM option 	<ul style="list-style-type: none"> Karaoke or Line-in at reduced cost Eliminates external multi-channel audio DAC 6ch Class D amplifier at reduced cost plus downmix I2S
Interface <ul style="list-style-type: none"> SPI Flash USB 2.0 FS host IDE port (ES8391) I/F to HDMI (ES8391) 	<ul style="list-style-type: none"> Reduce PCB foot-print Connect USB thumb-drives and card readers Connect network controllers, hard drives, CF Supports HDMI via external transmitter

APPLICATIONS

- Standalone DVD players
- DVD/VCR or TV/DVD Combo
- DVD receivers and A/V mini component systems
- DVD home theater in a box



DEVELOPMENT KIT



The Phoenix II DVD Development Kit comes with a complete set of tools:

- DVD reference design
- Data sheet and schematics
- User Interface software source code
- ROM emulator for code development

Additionally ESS provides FAE support for:

- Customer prototype design
- Firmware customization
- Servo tuning assistance