

## Product Brief

Zoran Corporation  
1390 Kifer Road  
Sunnyvale, CA 94086-5305

Tel 408.523.6500  
Fax 408.523.6501  
www.zoran.com



## Description

Zoran's SupraHD-660 ATSC/NTSC reference design is a complete hardware and software solution for building an integrated Digital Television (DTV) targeted at the United States market. The reference hardware module can either be used in LCD-based or CRT-based DTVs. The reference TV application software complies with the ATSC broadcast standards.

The reference design is a full-featured system that allows tuning, decoding, and display of analog (NTSC) and digital (ATSC) terrestrial broadcast. The SupraHD-660 DTV System IC decodes standard-definition and high-definition content. This IC is highly integrated, consisting of a MPEG-2 HD decoder, NTSC video decoder, HDMI interface, IEEE-1394 interface, high-performance CPU, powerful graphics engine, video scalar, video enhancement, LVDS driver and other peripherals necessary for building an integrated DTV. The reference hardware module accepts composite (CVBS), S-video

(Y/C), and component (YPbPr) inputs, and more advanced interfaces, such as HDMI from newer DVD players and IEEE-1394 from digital video recorders. It also accepts VGA input from a personal computer. The reference hardware module output interfaces can directly drive an LCD panel or a CRT TV. Other outputs include L/R audio for its internal speakers and SPDIF for multi-channel output to an external audio receiver.

The reference TV application supports the basic functionalities required for a DTV, such as an ATSC/NTSC software stack, Electronic Program Guide (EPG), closed-caption decoding, parental control, basic audio control (i.e. bass, treble, balance), and basic video control (i.e. contrast, brightness, color). For ease of connectivity to external devices, such as digital video recorders, the IEEE-1394 software stack is also bundled with the software package.

## Key Hardware Features

- SupraHD-660 DTV System IC
- Boot ROM: 32KByte on SPI bus
- NOR Flash Memory: 16MByte
- DDR SDRAM: 64MByte
- ATSC/NTSC Tuner
- Zoran 8VSB/QAM Demodulator
- Video In: ATSC/NTSC Tuner, CVBS, S-Video, YPbPr, VGA, HDMI, IEEE-1394
- Audio In: Left and Right Channels
- Main Video Out: LVDS (for LCD Panel), Analog YPbPr or RGB (for CRT TV)
- Auxiliary Video Out: CVBS and S-Video (for CRT TV)
- Audio Out: Left and Right Channels, SPDIF
- IR Remote, I2C, and RS-232 interfaces



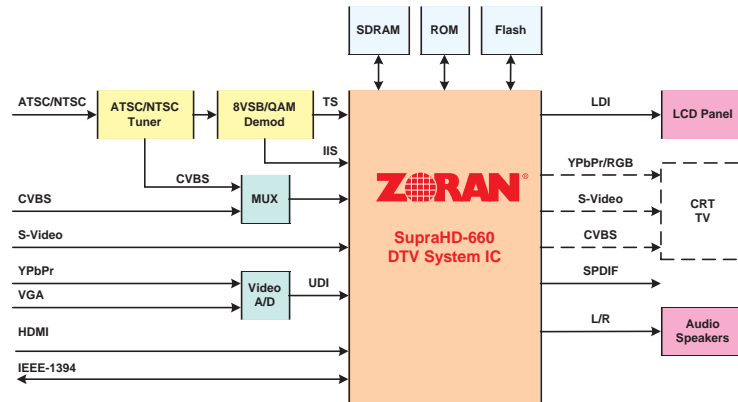
Zoran's SupraHD DTV Reference Design includes main board installed in flat panel display, stereo speakers, remote control, cables, preloaded software and documentation.

**DTV Reference Design**

**Product Brief**



**System Block Diagram**



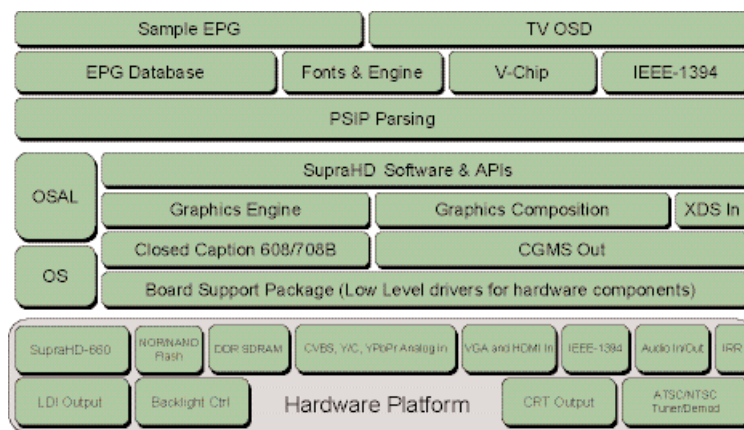
**System Software Features**

- ATSC/NTSC DTV application with customizable OSD
- Sample EPG
- V-Chip for analog and digital channels
- PSIP Parsing for channel map and EPG
- Analog and Digital Closed-Captioning (EIA-608 and EIA-708B)
- Fonts for OSD and Closed-Captioning
- Transport, Video Decode (single MP@HL), Audio Decode (AC-3, MPEG Layer I & II), Graphics, and Display drivers
- Peripheral drivers for Tuner, Demodulator, HDMI, and Analog inputs
- Thread-X royalty-free operating system
- IEEE-1394 software (Customer to license directly from VividLogic)

**Package Contents**

- 23-inch LCD HDTV with built-in main board, front-panel, and stereo speakers
- 110V-240V power adapter, remote control, and necessary cables
- Pre-loaded ATSC/NTSC compliant software on flash memory
- Complete documentation for reference design, software, and IC on a CD-ROM

**Software Architecture Diagram**



Export Classification Control Number (ECCN): 5A992 Product Order Code: ZR839660-ATSC-LCDX

For more information, contact Zoran's Sunnyvale office or the office nearest you:

Shanghai, China	Shenzhen, China	Hong Kong	Israel	Japan	Korea	Taiwan
Zoran China Office	Zoran China Office	Zoran Asia Pacific Ltd.	Zoran Microelectronics Ltd.	Zoran Japan Office	Zoran Korea Office	Zoran Taiwan Office
Tel: 86-21-6469-9799	Tel: 86-755-8281-5777	Tel: +852-2620-5838	Tel: +972-4-8545-777	Tel: +81-3-5475-1051	Tel: +82-2-761-7471	Tel: +886-2-2659-9797
Fax: 86-21-6427-0545	Fax: 86-755-8322-0889	Fax: +852-2620-5238	Fax: +972-4-8551-550	Fax: +81-3-5475-1053	Fax: +82-2-761-7472	Fax: +886-2-2659-9595

© Copyright 2005 Zoran Corporation. All rights reserved. Zoran, the Zoran logo, and SupraHD are trademarks of Zoran Corporation. All other brand product names and company names are trademarks of their respective owners. The information in this document is believed to be reliable, however, Zoran Corporation makes no guarantee or warranty concerning the accuracy of said information and shall not be responsible for any loss or damage of whatever nature resulting from the use of, or reliance upon it. Zoran Corporation does not guarantee that the use of any information contained herein will not infringe upon patent, trademark, copyright, or rights of third parties. Zoran Corporation reserves the right to make changes in the product and/or specifications, or both, presented in this publication at any time without notice.