



INNOVATE. DIFFERENTIATE. SUCCEED.
XILINX IN CONSUMER

FOCUS ON PRODUCT DIFFERENTIATION WITH XILINX CONSUMER ELECTRONICS SOLUTIONS

➤ Challenges Facing Consumer Electronics Designers

- Develop innovative products on shorter design cycles
- Anticipate consumer demands and quickly integrate features within weeks instead of years
- Stand out in the market with differentiated features and capabilities and compete on more than just price

➤ The Xilinx Solution

- Flexible platforms and advanced device portfolio, eliminating the restrictions of limited modification in ASSPs
- Extensive ecosystem of third party IP, expert design services, and training support to accelerate production cycles
- Single-chip FPGA-based system for reduced power, space, and overall bill of materials cost

The explosive growth in consumer media is forcing consumer electronics manufacturers into a race to add new features, increase performance and connectivity, achieve green certification, and develop next generation designs on shortened design cycles while reducing product form factors and lowering overall costs. The result is shrinking market windows, eroding market share and lower profit margins. To succeed against these pressures, consumer electronics designers must continually differentiate in order to sustain a competitive advantage while lowering system and development costs with fewer engineering resources.

Spartan® FPGAs are a low risk solution that offer an optimal balance of cost, power, and performance enabling consumer electronics designers to successfully address market demands and pressures. Leveraging these devices, the Xilinx Targeted Design Platform methodology provides developers with the advanced silicon, design tools, market-specific IP cores, development boards, and pre-validated reference designs needed to get their product to market faster and focus on product differentiation.

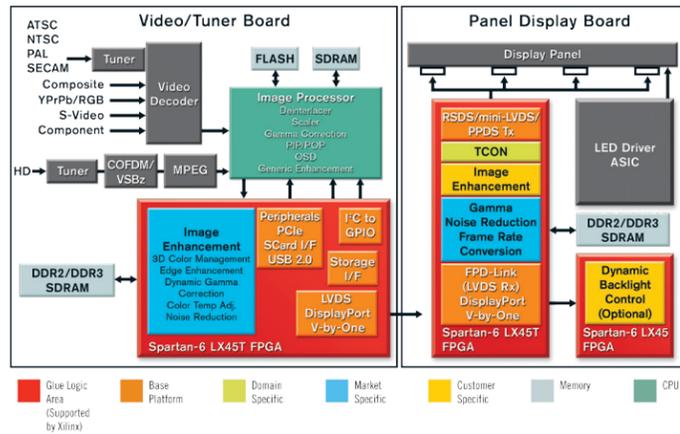
Xilinx enables consumer electronics designers to spend less time integrating and developing unique, differentiated features into their next generation designs for:

- Digital displays
- Set-top boxes (STBs)
- Digital cameras (DSC/DVC)
- Multi-function printers (MFPs)
- Portable handheld electronics

Manage Market Risk with the Right Balance of Performance, Cost, and Power

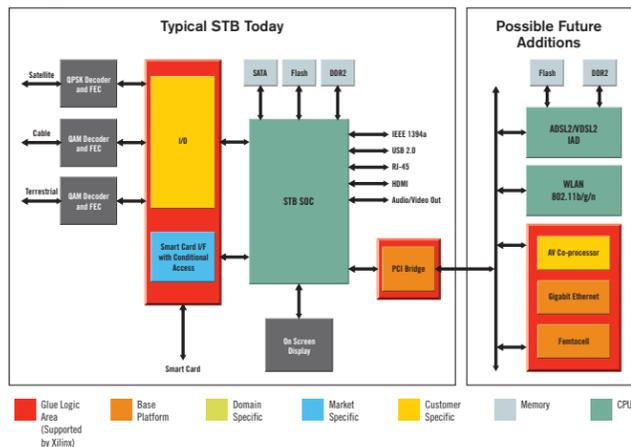
Xilinx Spartan® FPGAs deliver the high performance and processing capabilities for dynamic high-resolution video, image-processing, and connectivity demanded in leading consumer electronics – while being cost and power efficient. Xilinx devices are used by original equipment manufacturers (OEMs) globally for high-volume consumer applications.

Digital Displays



High-Resolution Video Flat-Panel Display with Dynamic Backlight Control

Set-Top Boxes



Future Femtocell Capabilities in a Typical Set Top Box

Get to market faster with Xilinx Consumer Video Solutions



Spartan-6 FPGA Consumer Video Kit

The ultimate platform for developing next generation video designs

Kit Features:

- Spartan-6 FPGA LX150T Baseboard
- Evaluation version of ISE® Design Suite
- Four daughter card options to support:
 - DisplayPort
 - V-by-One HS
 - HDMI
 - High speed LVDS
- Demo software
- Pre-validated reference design
- User guide
- Quick start guide
- Cables and power supply

For more information, please visit www.xilinx.com/s6cvk

Increase picture quality

Spartan-6 FPGAs offer a cost-efficient alternative to ASICs and enable DTV manufacturers to rapidly develop and deliver displays offering a superior viewing experience within ever-shrinking product lifecycles.

- Achieve tough performance and EMI targets easily with low-jitter spread-spectrum clocking
- Reduce power consumption, simplify thermal management, increase reliability, and reduce cost with high-capacity, low-power FPGAs
- Increase image quality with a rich library of image enhancement IP such as dynamic gamma correction, motion adaptive temporal noise reduction, and dynamic range compression
- Simplify high-bandwidth interfaces with flexible SelectIO™ technology, an integrated memory controller block, and DisplayPort-enabled 3.125Gbps GTP transceivers

Integrate new features

Spartan-6 FPGAs are ideal for STB designers who must incorporate the latest features and capabilities into their designs ahead of ASIC or ASSP implementations. The inherently flexible devices enable easy adoption of emerging protocols and standards such as:

- Forward error correction (FEC)
- I/O expansion
- Smartcard interfacing
- Memory and peripheral controller functions
- Power management
- MPEG decoding
- Custom onscreen overlay

Consumer Video Enhancement Reference Design

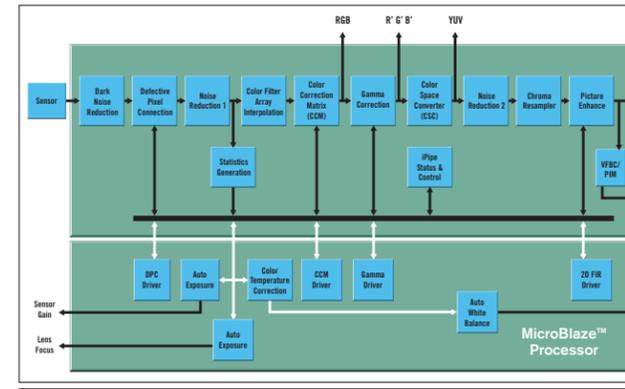
Differentiate and surpass the competition with impressive video enhancement capabilities

Features:

- Spartan FPGA-based video IP suite
- Gerber files and BOM for daughter card reproduction
- Complex video algorithms for:
 - Dynamic contrast enhancement
 - Color enrichment
 - Edge enhancement
 - Gamma correction
 - Contrast adjustment

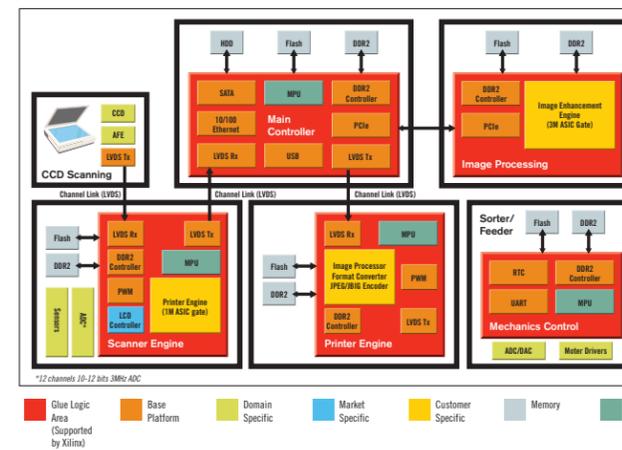
* Runs on a small daughter card (LVDS I/O)

Digital Cameras/Camcorders



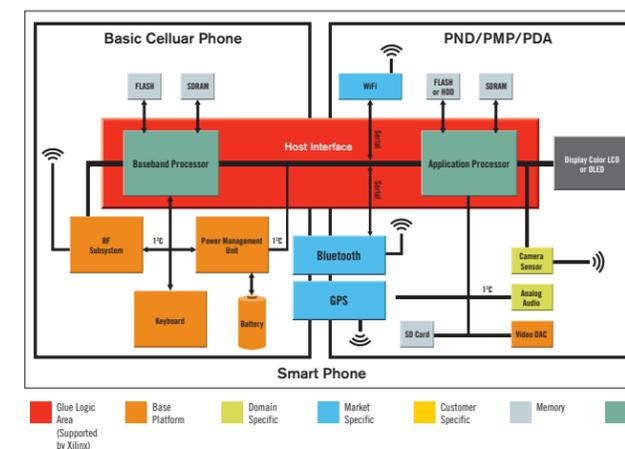
Xilinx Image Processing Pipeline LogiCORE IP comprised of five major blocks: Defective Pixel Correction, Color Filter Array Interpolation, Color Correction Matrix, Gamma Correction, and Color-Space Conversion

Multi-function Printers (MFPs)



Enhanced Performance in High-end Office-class MFPs

Portable Handheld Electronics



Low Power Smart Phone

Customize image processing designs end-to-end

Spartan-6 FPGAs along with the Xilinx Image Processing Pipeline LogiCORE™ IP offer designers a flexible platform for digital camera applications, performing:

- Image enhancement
- Auto focus
- Auto exposure
- White balancing
- Image processing
- Lens module control (D-SLR)

Reduce cost while adding enhanced features

Spartan-6 FPGAs enable MFP designers to develop scalable single-chip implementations for reduced BOM costs. High speed serial I/O in the devices enable increased interconnect capabilities and integration of functions on the printer board including:

- Main controller
- Printer engine
- Scanner engine
- Image processing and mechanical control

Introduce next-generation standards and features in reduced time

Xilinx FPGAs and CPLDs are ultra-low power solutions enabling rapid integration of new features, capabilities, and standards into next generation portable handheld devices:

- Smartphones
- Mobile internet devices (MIDs)
- Personal navigation devices (PNDs)
- Digital photo frames (DPFs)
- Personal media players (PMPs)
- Portable gaming consoles

Extensive IP Library for Complete Systems

An extensive library of intellectual property (IP) available from Xilinx and its Alliance members can be leveraged as the foundation for complete consumer electronics designs.

Please visit www.xilinx.com/esp/consumer/available_ip.htm for a complete list of available IP for consumer applications.

Sample IP for Digital Display and Video:

- **Color Optimizer** - Adaptive color saturation enhancement of pixels using the luminance and chrominance values, resulting in increased color based image contrast and enhanced image detail.
- **Contrast Enhancer** - Real-time contrast enhancement based on advanced algorithm that performs adaptive smart stretching according to image content.
- **Adaptive Image Enhancement** - Space-varying dynamic range correction to still images and real-time video, using proprietary algorithms based on the human visual system.



Take the NEXT STEP

For more information on Xilinx consumer electronics platforms and solutions, visit www.xilinx.com/consumer

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