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

**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

**FOCUS ON PRODUCT DIFFERENTIATION WITH XILINX CONSUMER ELECTRONICS SOLUTIONS**
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**

Digital Displays are critical components in consumer electronics, offering a superior viewing experience within ever-shrinking product lifecycles.

- Achieve high performance by integrating a variety of interfaces with flexible SelectIO™ technology, enabling easier integration of new features and capabilities into their designs.
- 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.

**Set-Top Boxes**

Set-Top Boxes are essential for delivering digital content to end-users, providing a seamless viewing experience.

- Integrate new features into their designs by leveraging Spartan-6 FPGAs, which offer a cost-efficient alternative to ASICs and enable TV manufacturers to rapidly develop and deliver displays.
- Increase picture quality and reduce power consumption by simplifying thermal management and reducing cost with high-capacity, low-power FPGAs.

**Get to market faster with Xilinx Consumer Video Solutions**

Xilinx provides a comprehensive suite of solutions and tools to help you get to market faster with your next-generation consumer video designs.

- **Spartan-6 FPGA Consumer Video Kit**
  - The ultimate platform for developing next-generation video designs
  - Features:
    - Spartan-6 FPGA
    - LX156T Board
    - Four daughter card options to support:
      - DisplayPort
      - V-by-One HS
      - HDMI
      - High-speed LVDS
    - Evaluation version of ISE® Design Suite
      - Demo software
      - Pre-validated reference design
      - User guide
      - Quick start guide
      - Cables and power supply

For more information, please visit [www.xilinx.com/sdok](http://www.xilinx.com/sdok)

**Digital Cameras/Camcorders**

Digital Camera/Camcorder design is an ongoing challenge, requiring rapid integration of new features, capabilities, and standards into next-generation devices.

- **Spartan-6 FPGA Video Processing**
  - Enhance performance and reduce power consumption by utilizing Spartan-6 FPGAs, which are ideal for STB designers who must incorporate new features and capabilities into their designs.

**Multi-function Printers (MFPs)**

Multi-function Printers (MFPs) are an essential part of today’s office environments, offering a range of printing, scanning, and copy functions.

- **Enhanced Performance**
  - 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

**Portable Handheld Electronics**

Portable handheld electronics require devices that are powerful, yet compact and energy-efficient.

- **Introduce next-generation standards and features in reduced time**
  - Xilinx FPGAs and CPLDs are ultra-low power solutions enabling rapid integration of new features, capacities, and standards into next-generation handheld devices.
  - Features:
    - Smartphones
    - Mobile internet devices (MiDIs)
    - 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.