PRODUCT OVERVIEW

The Marvell® Android Smart TV reference design, based on the Marvell ARMADA™ Accelerated Android for Consumer Electronics (Marvell A3CE) and Marvell ARMADA High-Definition (HD) Media Processor system-on-chip (SoC), is available to OEMs and ODMs for designing network-connected televisions. The reference design includes a Marvell HD media processor SoC, TV tuner and Wi-Fi/Bluetooth connectivity chip. The HD media processor SoC is a highly integrated chip consisting of: dual high-performance (1 GHz+) ARM processors to support a PC-like web browsing experience; graphics processing unit (GPU) for rendering HD graphics; secure demux engine for parsing and protecting high-value media content; multi-format HD AV decoder for decoding network AV streams; Qdeo™ processing, including automatic block/noise reduction for rendering best picture quality, even for low bit-rate network content; a customizable audio post-processor to support Dolby®/SRS audio post-processing routines and peripherals, such as USB, SDIO and Ethernet. The reference hardware accepts legacy TV inputs such as RF terrestrial/cable, composite video, component video and VGA, and includes 4 HDMI v1.4 ports for capturing 3D video from Blu-ray Disc players. One of the HDMI input ports supports audio return channel to enable “one cable” connectivity with one home theater receivers. The video output from the platform can be directly connected to drive full-HD LCD panels. The platform supports multiple stereo audio inputs and outputs for processed audio to speakers, or PCM/compressed audio to SPDIF/HDMI-ARC.

Marvell focuses on ensuring that our silicon and software can enable a superior Android experience for the new world order of media content delivery, and rich Internet applications, for CE devices. The Marvell A3CE software development kit (SDK) is comprised of an application layer, middleware layers and platform support layers. It allows customers to develop differentiated, winning Android SmartTV with a faster time-to-market.

The package includes a DTV reference design PCB, ATSC/QAM/NTSC middleware, network applications, including Google Play, and a customizable reference user interface and documentation.
### THE MARVELL ADVANTAGE:
Marvell chipsets come with complete reference designs which include board layout designs, software, manufacturing diagnostic tools, documentation, and other items to assist customers with product evaluation and production. Marvell’s worldwide field application engineers collaborate closely with end customers to develop and deliver new leading-edge products for quick time-to-market. Marvell utilizes world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low-cost total solutions.

### ABOUT MARVELL:
Marvell is a leader in storage, communications, and consumer silicon solutions. Marvell’s diverse product portfolio includes switching, transceiver, communications controller, processor, wireless, power management, and storage solutions that power the entire communications infrastructure, including enterprise, metro, home, storage, and digital entertainment solutions. For more information, visit our Web site at www.marvell.com.

### SPECIAL FEATURES

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<tr>
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<th>BENEFITS</th>
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<tr>
<td>Highest-performing ARM v6/v7 compatible dual-CPU cores</td>
<td>Fast application launch, PC-like web browsing</td>
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<td>Integrated with Marvell’s leading edge TV technologies:</td>
<td>RF tuning performance matching legacy can tuners</td>
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<td>- Clear RF</td>
<td>Fast switching between various analog/digital AV inputs</td>
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<td>- Swift View</td>
<td>High-resolution picture quality for HD, SD and low bit-rate content</td>
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<tr>
<td>Inputs: RF, CVBS, Component, VGA, HDMI, USB, LR Audio</td>
<td>Multiple AV Inputs for connectivity to legacy AV devices and to the network</td>
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<td>Network: Wi-Fi/Bluetooth, Ethernet</td>
<td>Complete system software to jump start Smart TV design and enables faster roll out of products</td>
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### SPECIAL FEATURES BENEFITS

- **Media**: Integrated with Marvell’s leading edge TV technologies:
  - Clear RF
  - Swift View
  - Qdeo

- **RF**: RF tuning performance matching legacy can tuners
- **AV Inputs**: Fast switching between various analog/digital AV inputs
- **Picture Quality**: High-resolution picture quality for HD, SD and low bit-rate content
- **Network**: Multiple AV Inputs for connectivity to legacy AV devices and to the network

### APPLICATIONS DIAGRAM

![Marvell Smart Android TV Reference Design Block Diagram](image-url)

Fig 2. Marvell Smart Android TV Reference Design Block Diagram