



Philips Nexperia Network Media Player

Complete reference design for next-generation digital media adapters

Key features

- Ready-to-manufacture reference design includes Nexperia PNX1502 media processor-based reference board and software
- Supports digital media content and remote applications
- Sophisticated media client software from Mediabolic
- Handles popular digital media formats including DivX®, MPEG-1/2/4, AVC/H.264, WMV9, MP3, AAC, JPEG, and more
- Robust image enhancement features, motion-adaptive deinterlacing, and high-quality upscaling
- Supports video resolutions up to 720p or 1080i via component and HDMI outputs
- Versatile wired (USB, 1394, Ethernet) and wireless (802.11a/b/g) connectivity to home LANs
- Customizable user interface (UI) with international language support
- Software designed to DLNA 1.0 DMP guidelines ensures cross-product interoperability

Current digital media adapters (DMAs) let consumers enjoy music, photos, and videos stored on home networks on the TVs and entertainment centers in their living rooms. The Nexperia™ Network Media Player reference design gives CE manufacturers a complete, flexible hardware and software platform for building unique DMA products that support these standard features and enable access to rich PC media content and Internet applications on TVs throughout the home.

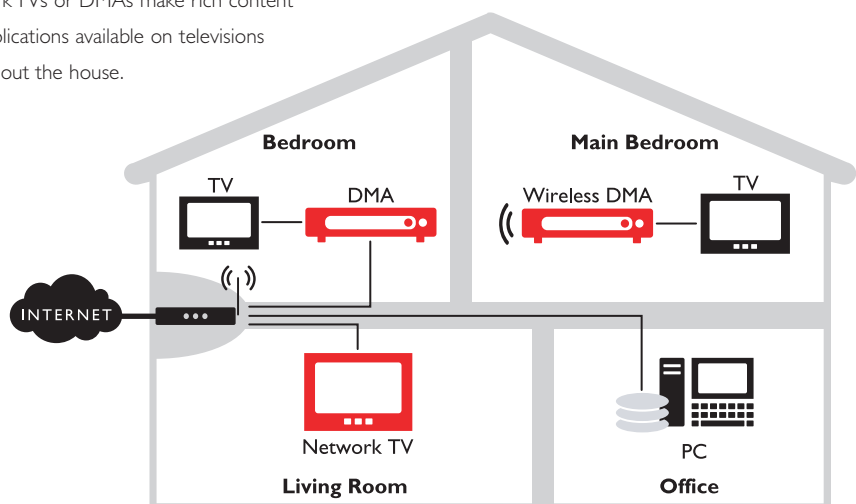
Network TVs and DMAs created with the reference design can communicate wired or wirelessly with networked PCs and home media server(s). Their high-quality digital

audio and video decoding, exceptional picture quality, and sophisticated software offer:

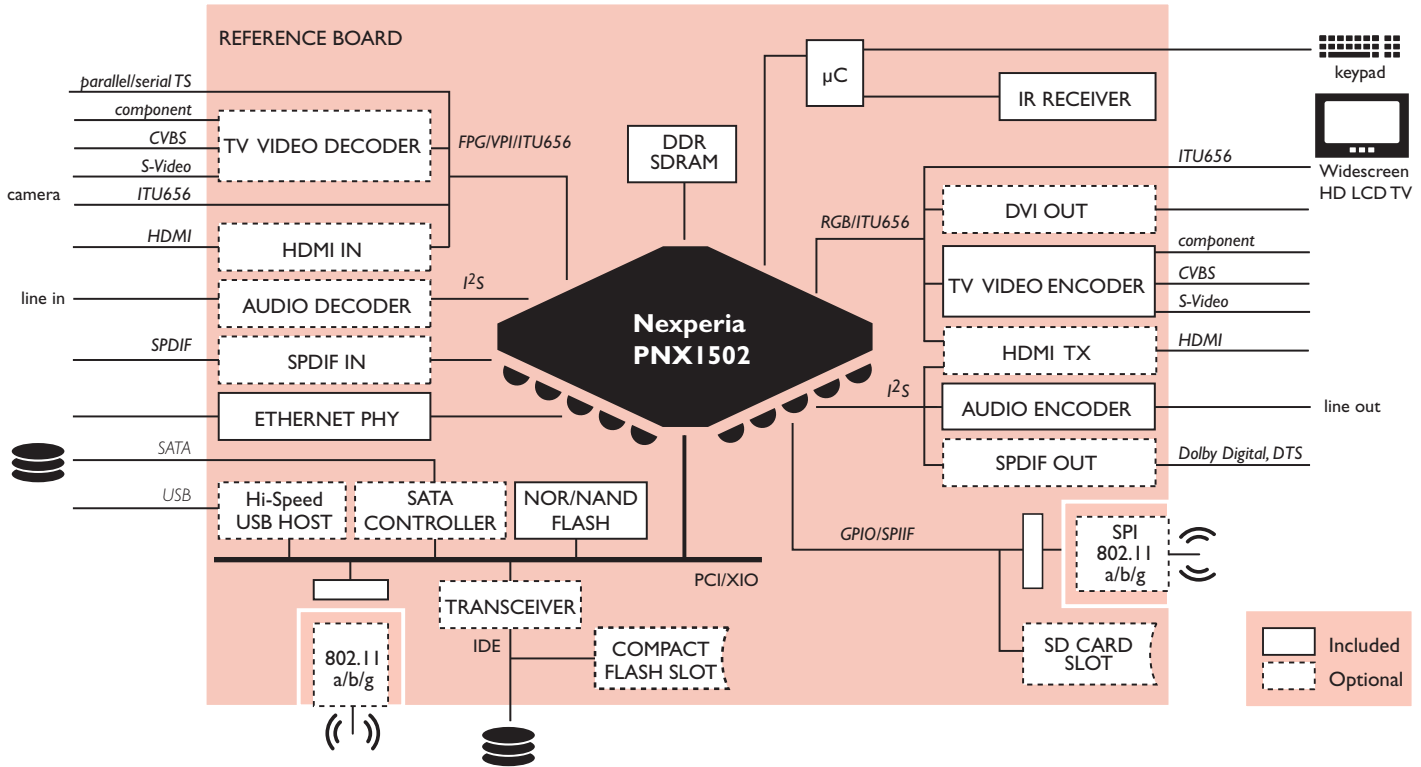
- streaming or downloading of high-quality music, videos, and photos from a PC, the Internet, digital video recorders (DVRs), or network-attached storage (NAS) devices to the TV or other media player devices using a remote control
- real-time browsing of online multimedia content from media players throughout the house

The reference design leverages the Nexperia PNX1502 media processor to render the most popular and emerging digital media formats. Its robust software enables easy

Network TVs or DMAs make rich content and applications available on televisions throughout the house.



PHILIPS



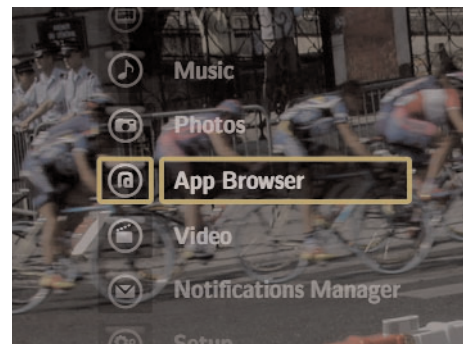
Conceptual reference board layout

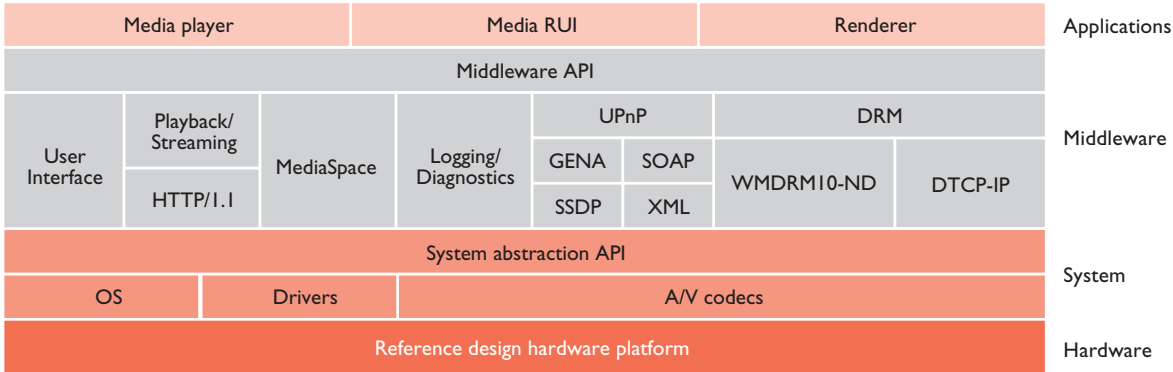
navigation and playback of large collections of media and applications. Manufacturers can tailor display and media processing functions to differentiate appealing players with various feature sets and price points. The reference design can also be integrated into a television with direct support for the display's native resolution.

Exceptional picture/video quality

The reference design utilizes the PNX1502's advanced image and video enhancement capabilities to deliver exceptional picture quality on LCD displays. State-of-the-art

motion-adaptive de-interlacing with optional edge detection and correction eliminates the need for an external chip to support progressive output. An on-chip graphics engine accelerates high-speed 2D graphics. An integrated TFT LCD controller enables direct output for integration into LCD and plasma TVs and supports display resolutions up to WXGA TFT LCD. For generating high-quality video on internal or external displays, the PNX1502 handles high-definition video scaling, linear and non-linear aspect-ratio conversion, anti-flicker filtering, brightness control, and a long list of video quality enhancements.





Reference design software architecture

Robust media player software

The reference design includes a complete, production-ready, binary media player software from Mediabolic, Inc. Optimized for a lean-back experience, the player’s UI lets users browse music, photo, and video files and access a wide variety of applications from a PC or the Internet, such as sports scores, news, and weather reports—all at the touch of a remote control.

Available separately from Mediabolic, media server software enables media players to access content stored on a PC, NAS, DVR or other server devices. The server application aggregates media content sources into one unified directory before presenting it to the user on the TV screen.

Media player and server applications support the UPnP standard, adhere to Intel® Networked Media Product Requirements (NMPR) specifications, and are designed to DLNA guidelines. Premium content playback is enabled by support for DTCP-IP and WMDRM10-ND.

Software customization and development tools

Media player software is fully customizable, with a flexible UI skin system and middleware plug-in API for personal, OEM, or third-party feature extension. It includes input and display support for international languages. Mediabolic offers software customization services as well as a Source Code Software Development Kit (SDK) enabling developers to extend the UI or any other aspect of the reference design software.

Mediabolic, Inc.

Mediabolic is a leading provider of end-to-end software solutions for connected entertainment products. Mediabolic technologies can be embedded in products such as TVs, set-top boxes, and NAS devices, allowing consumer electronics and PC manufacturers to extend and differentiate their products. Mediabolic technology uses a standards-based open architecture, enabling customers to ship award-winning solutions across diverse platforms to the consumer market. Founded in 1999, Mediabolic is located in San Mateo, California. For more information, visit www.mediabolic.com.



Technical Specifications



Reference design

Hardware	Reference board; remote control, cables
Software	Media player production binary
Documentation	User guide, schematics, Gerber files

Audio I/O	line in, SPDIF in, line out, SPDIF out
Display I/O	18- or 24-bit, RGB LCD interface
User interface	8-bit microcontroller for front panel keys, RC

Reference board

Media processor	Nexperia PNX1502; TriMedia CPU
Memory	64 MB DDR SDRAM (2x32)
Flash	32 MB NAND Flash
PCI/XIO bus	32-bit, 33-MHz
TV codecs	Philips SAA7104, encodes PAL or NTSC up to 720p or 1080i Philips SAA7118, decodes PAL or NTSC
Audio codecs	Philips UDA1334 encoder Philips UDA1361 decoder
Connectivity	miniPCI slot and card for 802.11 a/b/g SPI slot for 802.11 a/b/g; Philips ISP1560 Hi-Speed USB host controller Ethernet 10/100 PHY
Storage	HDD IDE and SATA headers portable Flash SD and Compact Flash slots
Video I/O	input CVBS, S-Video, HDMI, component output CVBS, S-Video, component up to 720p or 1080i, DVI, HDMI up to WXGA (1280 x 768 60 Hz)

Supported media formats

Video decode	MPEG-1, MPEG-2, MPEG-4 (SP,ASP), DivX-3/4/5, WMV9, AVC/H.26
Video encode	MPEG-1, MPEG-2, MPEG-4 (SP), DivX video
Audio decode	MP2, MP3, Dolby Digital®, AAC, WMA9
Audio encode	MPEG-1 L2, MP3
Image decode	JPEG, GIF, BMP, PNG
Networking	TCP/IP, Ethernet, 802.11x

Software and interoperability

DRM	DTCP-IP, WMDRM10-ND
Standards	Designed to DLNA 1.0 DMP guidelines; UPnP AV 1.0 Media Server, Control Point Meets Intel NMPR 1.0 specs; Intel eXtending Remote Technology (XRT) 2.2
Languages	input and display English, Western European display other unicode languages including Chinese, Japanese, Korean, Thai, and Arabic

Use of this product in any manner that complies with the MPEG-2 Standard is expressly prohibited without a license under applicable patents in the MPEG-2 patent portfolio, which license is available from MPEG LA, L.L.C., 250 Steele Street, Suite 300, Denver, Colorado 80206.

Mediabolic is a registered trademark and the Mediabolic logo is a trademark of Mediabolic, Inc. in the United States and in other countries. Dolby Digital is a registered trademark of Dolby Laboratories. Other brands and product names are trademarks or registered trademarks of their respective owners.

©2005 Koninklijke Philips Electronics N.V.

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

Document order number: 9397 750 15405

