Nexperia digital video recording solutions for security and surveillance

Flexible, media processor-based designs for standalone and PCI DVR applications

Today's digital security systems far surpass their analog predecessors in ease of use and functionality, making them more accessible to new customers such as schools, retail stores, offices, even residential home owners. Nexperia® digital video recording solutions give security and surveillance suppliers, integrators, and solution providers new ways to meet the growing needs of this expanding market.

Key features

- PCI and standalone DVR configurations
- Record (encode) popular digital media formats including MPEG-1, MPEG-2, MPEG-4, AVC/H.264, MP3, AAC, JPEG, MJPEG, and more
- Multichannel video encoding:
  - 2- to 16-channel CIF (D1 preview)
  - 1- to 4-channel D1
- Robust image enhancement features
- Versatile wired (USB, 1394, Ethernet) and wireless (802.11a/b/g) connectivity
- Single and dual Nexperia media processor designs
- 2D engine accelerates complex graphics for real-time overlay

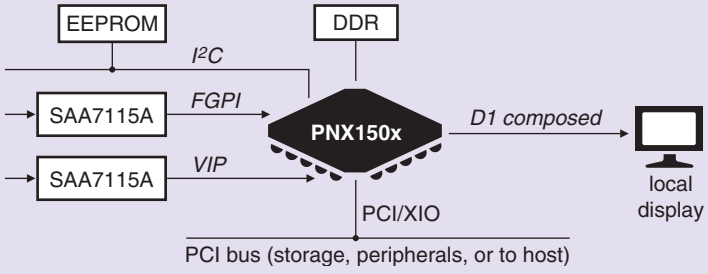
Nexperia DVR solutions

Digital video recorders (DVRs) are a key component of today's security systems. They encode and store hundreds of hours of video surveillance footage that can be viewed on demand and used in sophisticated analytics and intelligence applications.

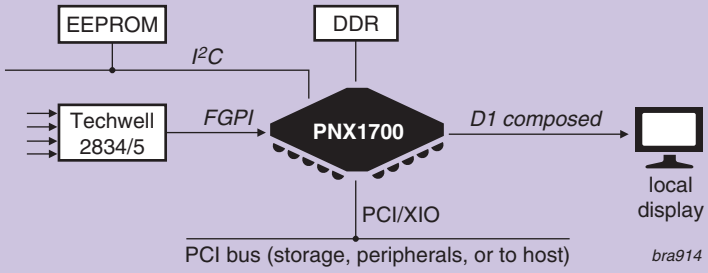
NXP offers a variety of flexible solutions for building standalone and PCI-based DVRs. Based on Nexperia PNX1x00 media processors, each design handles multi-resolution, multi-channel encoding and decoding of today's industry-standard digital video, audio, and still image formats. An efficient PCI/XIO architecture supplies ample bandwidth for applications such as analytics, motion detection, gait analysis, facial recognition, and more — even while streaming multiple video channels. Storage is supported to both hard disk drives and flash memory. Highly integrated, low BOM configurations enable manufacturers to reduce cost and time-to-market in a wide range of security products.

NXP founded by Philips

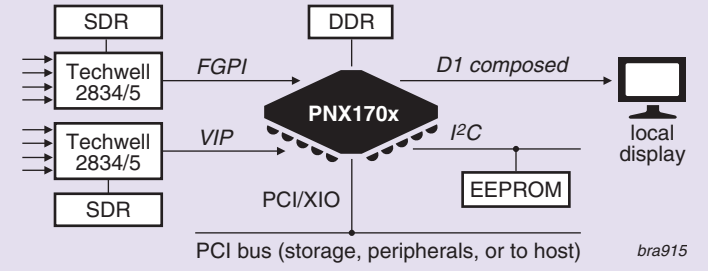
2-channel CIF with D1 preview



4-channel CIF with D1 preview



8-channel CIF with D1 preview



Exceptional picture/video quality

All NXP DVR designs take advantage of Nexperia media processors' advanced video and picture enhancement capabilities to deliver exceptional video quality on CRT and LCD displays.

- A versatile, programmable memory-based scaler unit enhances video quality and prepares it for display.
- 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 screens and supports display resolutions up to WXGA TFT LCD.

Working together, these on-chip units handle linear and non-linear aspect-ratio conversion, brightness control, anti-flicker filtering, and a long list of video quality enhancements with few external components.

Connectivity

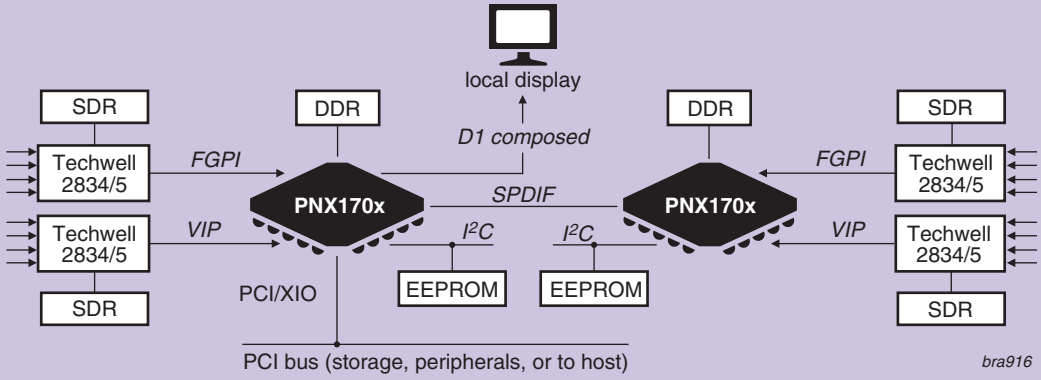
All DVR configurations incorporate features to support wired and wireless networking and connectivity.

- wired: Ethernet, TCP/IP, USB, 1394 and more
- wireless: 802.11 and more

Multistandard video input

NXP DVR configurations utilize video input processors to decode analog video inputs from security cameras into ITU601-compatible color component values before digitizing the signal. Each input processor includes source selection, anti-aliasing

16-channel CIF with D1 preview



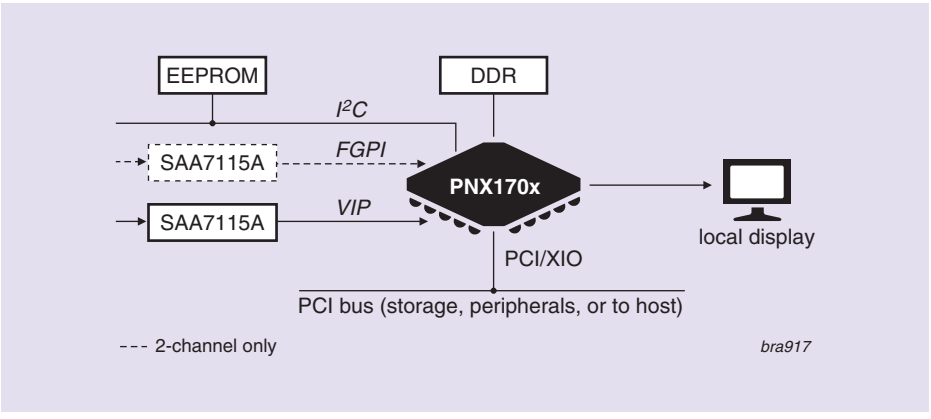
filtering, ADC, automatic clamp and gain control, clock generation, multi-standard analog decoding (PAL, SECAM and NTSC), brightness, contrast and saturation controls, and multi-standard VBI data slicing.

Complete software development environment

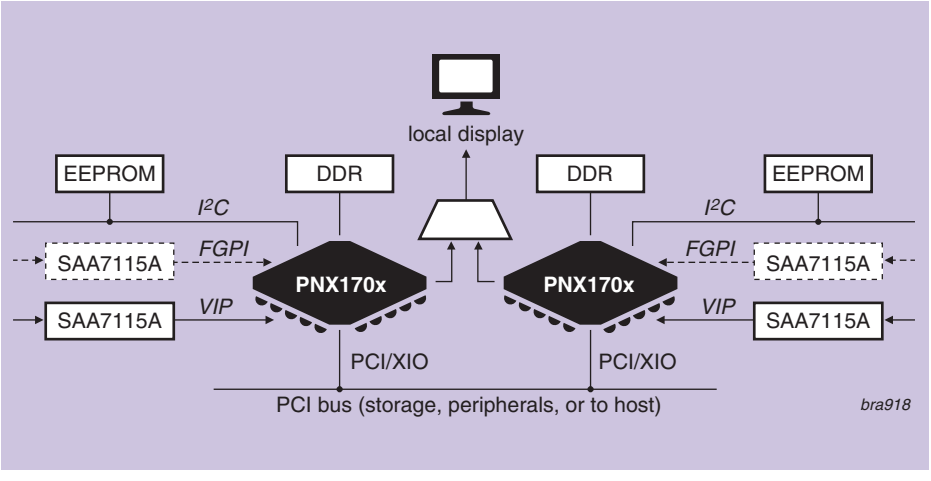
All Nexperia PNX1x00 media processors are supported by the Nexperia Media Player Software Development Kit (SDK), a suite of system software tools for creating and testing applications, libraries, and products on Nexperia media processors. In addition to audio and video codecs, drivers, an operating system, demos, examples, test streams and documentation, the SDK includes comprehensive tools for compiling and debugging code, analyzing and optimizing performance, and simulating execution of applications entirely in C/C++.

The SDK can also be used to develop customized security applications for both DVR and IP camera configurations. It is supported by a worldwide network of NXP software developers and includes lifetime upgrades and online technical support.

1- or 2-channel D1



4-channel D1



DVR reference designs, development boards, and codecs

A wide variety of security DVR configurations, security applications and support are available through a network of third-party hardware and software partners.

California-based Momentum Data Systems (MDS) provides development boards, software development tools, design services, sample board schematics, a bill of materials, and more. MDS also offers a number of PCI-based and stand-alone development kits which can be used to kick-start software development of DVR designs. Schematics and board design guidelines are available for customers interested in designing their own production-ready boards. For more information, visit www.mds.com.

Software partner, Shanghai Suntimes Electronics Technology Company, Ltd., provides production-ready software encoders written specifically for NXP media processors. These encoders are optimized to take advantage of special CPU instruction sets which improve quality and decrease processor load. For more information, visit www.suntimes.cc.

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