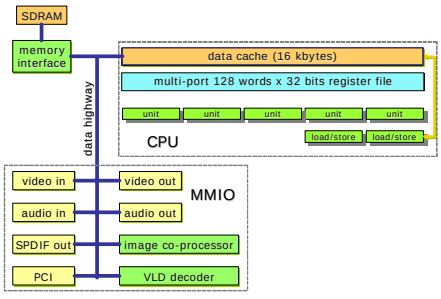
Nexperia pnx1300 peripherals: a 1-day class

TriMedia Extension

Benefits

- Know the pnx1300 peripherals
- Program pnx1300 I/O
- Program pnx1300 co-processors

Know the pnx1300 peripherals and co-processors, and how to program them using device libraries and interrupt service routines.



Learn the ins and outs of the pnx1300 SoC

Contents

This seminar describes the Nexperia pnx1300 peripheral architecture and explains how peripherals are configured and programmed. It also includes explanation of basic digital video and sampling schemes, as used in the video peripherals.

pnx1300 peripherals

Overview of the pnx1300 peripheral architecture and available peripherals.

- Pnx1300 peripheral architecture
- Pnx1300 MMIO registers

Digital video data

Learn the basics of digital video including details of sampling schemes and storage formats. Also how video data is stored by and for the pnx1300 video peripherals and co-processors.

- RGB and YUV color spaces
- Raster scan sampling
- Flicker and motion
- Video fields and frames
- Perceptual compression
- Video sampling schemes
- YUV 420 and 422
- Planar and semi-planar storage
- Packed video storage

pnx1300 video output

The pnx1300 video output peripheral as an example of a peripheral.

- Video output features
- Video output
- Video overlay

Software architecture

Describes the organization of peripheral software support, including the relationship to the TriMedia Software Architecture (TSA) and software layers.

- Peripherals and TSA
- Device Layer
- Board Support Library
- Configuration structures
- Configuration functions
- Interrupt handling
- Interrupt programming

Cache coherency

Explains the important question of synchronizing the cache with data entered directly to memory by peripherals (which bypass the cache).

- Data cache coherency and MMIO
- Data cache copyback simulation

pnx1300 peripherals

Learn the pnx1300 peripherals in detail.

- Video output
- Video output overlay
- Image Co-Processor
- ICP overlay
- VLD
- Audio input and output
- SPDIF output
- SSI and I2C
- PCI and XIO

Time and arrangements

This session takes 1 day.

It is presented ‘on-site’ by arrangement - the material can be adapted if you have specific needs (at extra cost).

Sometimes we arrange ‘public’ classes: schedules are posted on the Internet:

http://www.bores.com/schedule.htm

Pic’N’Mix

You can design a class to suit your own specific needs. Each of the topics in this TriMedia Foundation class can be a self-contained session, from which you can “pic’n’mix” to make your own class.

Contact us:

chris@bores.com

Booking and questions

Call us by ‘phone or send email to book or to ask questions.

- contact: Dr Chris Bore
- ‘phone: +44 (0)1483 740138
- mobile: +44 (0)7921 153219
- email: chris@bores.com

Foundation class

The ‘TriMedia Foundation’ is a 4-day class on all aspects of the TriMedia. It includes this class.

The pnx1300 class is optional. We recommend this be part of the 4-day TriMedia Foundation class but it can stand on its own or be part of a custom class.

BORES Signal Processing, ‘Fordwater’, Pond Road, Woking, Surrey GU22 0JZ, England:
‘Phone: +44 (0)1483 740138 Web site: www.bores.com email: chris@bores.com