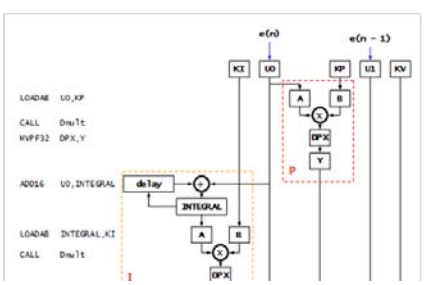
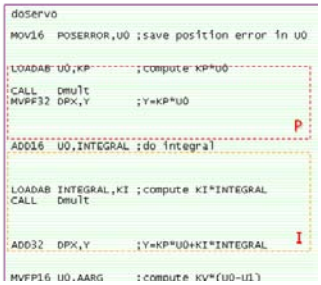
DSP with dsPIC

DSP training

Benefits

- Analyze DSP system requirements
- Specify, design and apply DSP
- Analyze required arithmetic precision
- Estimate computational requirements
- Implement on Microchip dsPIC™





DSP with dsPIC

You can now design very cost effective DSP systems based on low cost 'DSP microcontrollers' such as Microchip's dsPIC. But to do so you must be careful to analyze the processing for arithmetic precision and computational complexity – issues that are often neglected in DSP teaching.

Class aims

We show how you can analyze the signal and noise characteristics to guide the choice and design of suitable processing, decide clear quantitative design specifications and choose design parameters, and implement the processing in real time on dsPIC™ hardware.

Class topics

The class covers analyzing expected signal and noise and using these to guide specification and design of the processing, as well as implementation of each stage on the dsPIC hardware.

- Signals and Noise
- Processing Gain
- Designing DSP specifications
- dsPIC programming
- Frequency domain
- Sampling
- Sizing
- Discrete Fourier Transforms
- Filtering

Signals and Noise

How to estimate, measure and analyze signal and noise characteristics to guide the required DSP specification.

- Signal and Noise
- Processing Gain

dsPIC programming

dsPIC architecture and programming for DSP.

- dsPIC architecture
- programming

Frequency domain

Viewing DSP as operations in the frequency domain.

- Frequency domain analysis
- Window functions

Sampling

Sampling, its effects and the consequences for DSP systems.

- Sampling
- Aliasing

Sizing

How to specify DSP based on signal and noise characteristics and the application goal.

- Filter length
- Arithmetic precision

Fourier Transforms

Understanding the DFT and FFT.

- DFT and FFT implementations
- DFT Figures of Merit

Filters

How to design, implement and analyze FIR filters.

- FIR filter applications
- FIR filter design

Target audience

This class is aimed at programmers, engineers and managers designing low cost embedded DSP products, and who wish to implement what they learn on a low cost DSP microcontroller.

Time and arrangements

This class takes 5 days. Check our schedule at:
www.bores.com/index_schedule.htm

It can also be presented 'on site by special arrangement and the material can be adapted if you have specific needs.

Booking and questions

Call us by phone or send an email to book or to ask questions:

- contact Dr Chris Bore
- mobile +44 7921 153219
- email: chris@bores.com

About Us

BORES Signal Processing train managers, engineers and programmers to understand and use DSP and streaming media processing.

- established 24 years
- excellent reputation
- worldwide activities
- • www.bores.com

Bores Signal Processing Fordwater Pond Road Woking Surrey GU22 0JZ UK
Tel: +44 1483 740138 Email: chris@bores.com Web: www.bores.com