



Freescale Technical Training

Helping you quickly learn what you need to make your next design a success

Classroom Training—CT201

S12X Family Course

Target Applications

Automotive body, antilock braking system, airbag and industrial applications. To learn more, visit www.freescale.com and type document number MC9S12 in the Key Word Search, located in the upper right-hand corner.

Course Description

The S12X three-day course covers the major hardware and software features of Freescale's S12X family, which is targeted for high performance, low power and cost-sensitive applications.

The course provides extensive coverage of the S12X instruction set architecture, overall system operation, I/O peripheral and application examples. The first part of the course will enable the student to write S12X assembly and C-language programs.

It also includes coverage of the S12X interrupts, XGATE core architecture, event

handling and data transfer operation. It covers the S12X family of peripherals, such as SCI, SPI, PIT and watchdog timer, enhanced capture timer, A/D converter, CAN bus, inter-IC bus, BDLC and debug modes, including external bus interface and operating modes. Each module covered will also feature a hands-on lab.

After covering CPU12 and XGATE cores and all on-chip peripherals, participants will be able to program and interface the S12X to many of their target applications. Hands-on training will be provided on most modules by using the S12X evaluation board and CodeWarrior™ development tools.

Prerequisite

Basic understanding of some microprocessor/microcontroller will be helpful. Due to the high degree of functionality and integration of this device, the participant is encouraged to gain some familiarity beforehand by

reviewing current Freescale documentation for this product. Introductory-level, Web-based training materials are available at www.freescale.com/training. Search for SX12 for a list of available overview materials.

Who Should Attend

Software and system engineers who need to come up to speed quickly on how to program and design with the S12X devices are urged to participate.

Attendees will be provided a hard copy of the workshop notes and lab book. A CDROM of all the lab experiments and demo version of the development tools is also provided.

Course Fees

US\$1000 per participant

Course Enrollment

Open Enrollment

To view a list of open enrollment classes for the S12X family:

1. Visit www.freescale.com/webapp/sps/site/training_information.jsp?code=CT_201_S12X_Family
2. Select "View Scheduled Events" (if button is missing, no classes are currently offered)
3. Select the "Register" link for the class you want to attend

On-Site Enrollment

As with any of our Technical Training courses, the S12X family course can be taught at your facility and customized to fit your needs. The cost of a customer on-site class is dependent upon the customer's training requirements.

Contact

techtraining@freescale.com for more information

Freescale offers training related to all of Freescale's products and technologies.

We offer the following training options:

- Live Training
- Web-Based Training
- Virtual Labs
- Webinars

S12X Course Agenda

Day 1	Day 2	Day 3
Introduction to S12X and XGATE	XGATE RISC Core	S12X Peripherals (continued)
• S12X Core	• Features and Concept	• msCAN
• Addressing Modes and Instruction Set	• XGATE Programming Model	• BDLC
• Operational Modes	• Addressing Modes and Instruction Set	• Enhanced Capture Timer
• Interrupt Handling	• I/O Requests, Event Handling and Servicing	• A/D Converter
• Resource Mapping	• System Protection and Semaphoring	• Flash Programming
• Memory Expansion/Paging	S12X Peripherals	• Background Debug Mode
	• SCI and SPI	
	• I ² C	

Learn More:

For more information on the latest live and online training options, visit the Freescale Training Site at www.freescale.com/training.