

XMC7000 chip operational modes

Customer training workshop (CTW)

March 2026

Public

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Target products

Target product list for this training material:

Family category	Series	Code flash memory size
XMC7200	XMC7200-8M	Up to 8384 KB
XMC7100	XMC7100-4M	Up to 4160 KB

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XMC7000 operational modes



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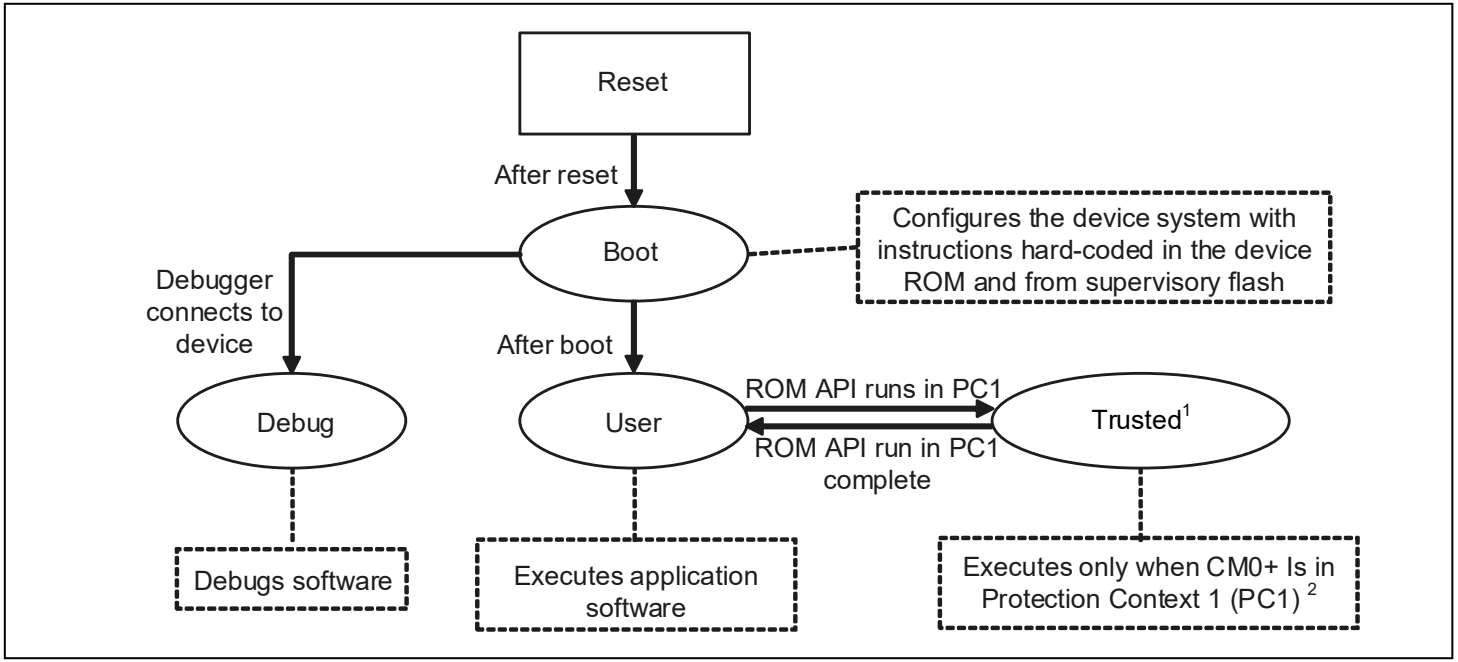
Overview

XMC7000 can execute software in four different modes: Boot, User, Trusted, and Debug



Hint bar

- See the architectural reference manual, chip operational modes (chapter 14), for additional details
- Device power modes are different from chip operational modes. See the device power modes training section for additional details
- See the device security training section for additional details on boot mode
- See the program and debug interface training section for additional details on debug mode

[1] Trusted mode allows the execution of special subroutines stored in the device ROM, which cannot be modified by the user and are used to execute copyrighted code.
[2] In XMC7000, the ROM API runs in PC1 for safety and security reasons so that the ROM API has the minimum privilege required to perform its functions.

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Summary

Operation modes are summarized in the following table:

–	Main operation					Privilege level	
	ROM Boot execute	Flash Boot execute	User software execute from flash		Trusted ROM code execute only when CM0+ is in protection context 1	Privileged operation	Unprivileged operation
			Interrupt	Debugging			
Boot mode	✓	✓	–	–	–	✓	–
User mode	–	–	✓	–	–	✓	✓
Trusted mode	–	–	–	–	✓	✓	–
Debug mode	–	–	✓	✓	–	✓	✓

Hint bar

- See the architectural reference manual, Chip operational modes (chapter 14), for additional details
- See the architectural reference manual, Device security (chapter 13), for additional details on protection states
- See the Device security training section for additional details on protection context
- See the CPU Subsystem training section for additional details on privileged and unprivileged operation

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Revision history

Document revision	Date	Description of change
**	2022-06-01	Initial release.
*A	2026-03-13	Migrated to the latest empower training presentation template.

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