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32-Bit Industrial Microcontroller based on ARM® Cortex®-M

Infineon has combined its wealth of experience in microcontroller design for real-time critical applications with all the benefits of an industry-standard core. The unique result, the XMC™ microcontroller family based on ARM® Cortex®-M cores, is dedicated to applications in the segments of power conversion, factory and building automation, transportation and home appliances.

XMC1000

- Cortex® M0, 48 MHz
- Up to 200 kB Flash
- Applications:
  - low-cost motor control
  - LED lighting
  - power conversion
  - general purpose

> Learn more & find products

XMC4000

- Cortex® M4F, 144 MHz
- Up to 2 MB Flash
- Applications:
  - automation (industrial drives, PLC, I/O)
  - power conversion

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XMC™ KITS and BOARDS

XMC™ SOFTWARE, TOOLS and PARTNERS

DAVE™ FREE DEVELOPMENT PLATFORM

32-Bit Industrial Microcontroller based on ARM® Cortex®-M subcategories

+ Expand all subcategories

+ 32-bit XMC1000 Industrial Microcontroller ARM® Cortex®-M0

+ 32-Bit XMC4000 Industrial Microcontroller ARM® Cortex®-M4

+ XMC™ Development Tools: Kits and Boards

+ XMC Development Tools - Software and Tool Ecosystem

+ DAVE™ (Version 4) – Development Platform for XMC™ Microcontrollers

XMC™ and DAVE™ Forum

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NEW! XMC4300 Microcontroller series

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NEW! XMC1400 Microcontroller series

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NEW! Power Management Selection Guide 2016

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XMC**™** Brochure

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Motor Control Brochure

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General Lighting Brochure

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New Infineon XMC**™** Families Video (Embedded World 2015)

32-Bit Industrial Microcontroller based on ARM® Cortex®-M

NEW! XMC1400 industrial microcontroller series

- 70%+ performance over existing XMC1000
- New features for industrial I/O, SMPS and combustion engine control
- Up to 64-pin packages and 200 KB Flash memory

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NEW! XMC4300 industrial microcontroller series

Infineon's new XMC4300 microcontroller series, specifically developed for EtherCAT ® industrial applications, further reduces complexity in EtherCAT ® implementation and cost in factory automation, industrial motor control, I/O modules and robotics.
Learn more & download datasheets
Download product brief
Download press release

32-Bit Industrial Microcontroller based on ARM® Cortex®-M

Training

Title	Size	Date	Version
Application - Capacitive sensing with XMC1200　› EN	1.1 MB	17 Aug 2016	01_00
Application - Power conversion - Power factor correction (PFC) with XMC™　› EN	1.5 MB	18 Aug 2016	01_00
XMC™ - Product introduction　› EN	1.3 MB	29 Apr 2016	01_00

Title	Size	Date	Version
Application - Power Conversion - XMC™ in Power Conversion Applications › EN	1.9 MB	20 Jul 2016	01_02
Training Introduction to Microcontroller World › EN	674 KB	13 Apr 2016	01_00
Peripheral - EtherCAT® Slave Controller (ECAT) › EN	1.2 MB	18 Aug 2016	01_00
Application - Lighting - Digital Addressable Lighting Interface (DALI) Control Gear › EN	2.1 MB	17 Aug 2016	01_00
Peripheral - Multi-Controller Area Network (MultiCAN) › EN	1.1 MB	18 Aug 2016	01_00
XMC™ - Introduction to targeted application segments › EN	1.3 MB	29 Apr 2016	01_00
Application - Lighting - Digital Multiplex (DMX512) Receiving Device › EN	1.2 MB	17 Aug 2016	01_00
Tooling - XMC4000 boot mode options › EN	690 KB	18 Aug 2016	01_00
Training Lighting XMC™ in LED Lighting Applications › EN	1.4 MB	13 Apr 2016	01_00

Application Brochure

Title	Size	Date	Version
Application Brochure 3D Printer › EN	340 KB	23 Oct 2015	01_00
Application Brochure Major Home Appliance › EN	4.4 MB	24 May 2016	01_00
Application Brochure Automatic Opening System › EN	409 KB	28 Jan 2016	01_00

User Manual

Title	Size	Date	Version
XMC4300 Reference Manual › EN	19.8 MB	19 Feb 2016	01_00
XMC4700 XMC4800 Reference Manual › EN	19.5 MB	12 Apr 2016	01_02
XMC4200 Microcontroller Digital Power Control Card User Manual › EN	1.8 MB	12 Feb 2016	01_01

Additional Product Information

Title	Size	Date	Version
Advertisement Automatic Openings System › EN	134 KB	28 Jan 2016	01_00

Title	Size	Date	Version
Advertisement Automatic Openings System › EN			
Market News XMC4000 Safety Package › EN	84 KB	25 Nov 2015	01_00

Product Selection Guide

Title	Size	Date	Version
Power Management Selection Guide 2016 › EN	21 MB	22 Feb 2016	00_00

Application Brief

Title	Size	Date	Version
Application Brief System Solution Light Electric Vehicles › EN	408 KB	24 Oct 2014	01_00
Application Brief System Solution Battery Powered Motor Drives › EN	712 KB	27 Feb 2014	01_00

Application Notes

Title	Size	Date	Version
Application Note - XMC1000 - Boot mode handling for XMC1000 › EN	1.3 MB	11 Feb 2016	01_00
AP32339 - XMC1000/XMC4000 - Managing firmware integrity in XMC™ › EN	998 KB	13 Jun 2016	01_00
AP24026 - EMC and System-ESD Design Guidelines for Board Layout › EN	2.9 MB	15 Mar 2016	03_05
AP32316 - XMC1000 - PCB design guide › EN	1.6 MB	30 May 2016	02_02
AP32326 - XMC1000 - C-Start and device initialization › EN	701 KB	30 May 2016	01_00

Product Brief

Title	Size	Date	Version
Product Brief XMC4300 4800 Series › EN	159 KB	08 Feb 2016	01_00
iMOTION™ MADK platform › EN	488 KB	10 May 2016	01_00

32-Bit Industrial Microcontroller based on ARM® Cortex®-M

Evaluation Boards

Board	Family	Description	Status
› KIT_XMC_2GO_XMC1100_V1	Microcontroller	The XMC 2Go Kit with XMC1100 is maybe the world's smallest, fully featured Microcontroller Evaluation Kit showcasing - XMC1100 (ARM® Cortex™-M0 based) - On-board J-Link Lite Debugger (Realized with XMC4200 Microcontroller) - Power over USB (Micro USB) - ESD and reverse current protection - 2 x user LED - Pin Header 2x8 Pins suitable for Breadbord • XMC1100 • XMC4200	active and preferred
› KIT_XMC1300_DC_V1	Microcontroller	The debug interface is isolated from the XMC microcontroller and the position detection interfaces to guarantee safe operation during software development. The best fit for the XMC1300 card is the DAVE™ Motor Control Apps library and X-Spy for SW development and parameterisation. • XMC1300	active and preferred
› KIT_XMC44_AE3_001	Microcontroller	XMC4400 Microcontroller Board Power board: - 24V/7.5 A - 3-Phase Inverter with N-Channel Optimos™ power transistors (BSC031N06NS3 G) and EiceDRIVER™ gate driver (6ED003L02-F2) BLDC Motor From Nanotech • XMC4400	active and preferred
› KIT_XMC4400_DC_V1	Microcontroller	The debug interface is isolated from the XMC microcontroller and the position detection interfaces to	active and preferred

		guarantee safe operation during software development. The best fit for the XMC4400 Drive card is the DAVE™ Motor Control Apps library and X-Spy for SW development and parameterisation. • XMC4400	
› KIT_XMC750WATT_MC_AK_V1	Microcontroller	The power board includes off-the-grid supply with input filter, active PFC and high switching frequency IGBTs from Infineon to turn your 3-Phase drive. Both CPU Cards (XMC1300 and XMC4400 Drive Card) provide a galvanic isolation for the debug interface to guarantee safe operation during software development. • XMC1300 • XMC4400	active and preferred
› KIT_LED_XMC1202_AS_01	Microcontroller	The RGB LED Lighting Shield from Infineon is one of the first intelligent evaluation boards compatible with Arduino as well as Infineon's XMC1100 Boot Kit. The RGB LED Lighting Shield with XMC1202 for Arduino uses a DC/DC buck topology and is able to drive up to 3 LED channels with constant current. The shield itself is powered by a programmable XMC 32-bit ARM® MCU with embedded Brightness Color Control Unit (BCCU, XMC1200 MCU series), for flicker-free LED dimming and color control. • XMC1000	active and preferred
› KIT_XMC_DP_EXP_01	Gate Driver, Microcontroller, MOSFET	The new XMC digital power explorer kit utilizes Infineon's industry leading XMC range of ARM® Cortex®-M microcontrollers, OptiMOS™ BSC0924NDI MOSFETs and IRS2011S high and low side drivers. The kit's power board features synchronous buck converter with on-board	active and preferred

		resistive load banks. • BSC0924NDI • IRS2011S • XMC1302-T038X0200 AB • XMC4200-F64K256 AB	
› KIT_XMC11_BOOT_001	Microcontroller	The XMC1100 CPU Card for Arduino TM has two rows of pin headers which fully compatible with Arduino TM shield . Hence, user can buy various Arduino shield boards off - the - shelf to test the capabilities of XMC1100 Microcontroller. • XMC1000	active and preferred
› KIT_XMC13_BOOT_001	Microcontroller	The XMC1300 CPU board (CPU-13 A-V1) houses the XMC1300 Microcontroller and a 2x30 pin edge for application expansion. The board along with application cards (e.g. Colour LED Card , White LED Card) demonstrates the capabilities of XMC1300. The main use case for this board is to demonstrate the generic features of XMC1300 device including tool chain. The focus is safe operation under evaluation conditions. The board is neither cost nor size optimized and does not serve as a reference design. • XMC1300	active and preferred
› KIT_XMC1X_AK_MOTOR_001	Microcontroller	MCU board with XMC1300 and detachable SEGGER J-Link debug interface Motor board 12 – 24V, up to 3A On board 3-phase motor (24V, 15W) with hall sensors Optional encoder interface Power supply 24V, 1A • XMC1300	active and preferred
› KIT_XMC45_AE4_002	Microcontroller	CPU Board XMC4500 General Purpose - Standard Human Machine Interface Card (HMI_OLED-V1)- Ethernet/CAN/RS485 Interface Card (COM_ETH-V1)- J-Link Lite CortexM	active and preferred

		Debugger- Pin Extension Board (UNI_EXT01-V2)- Headset- USB cable • XMC4500	
› KIT_XMC48_RELAX_ECAT_V1	Microcontroller	XMC4800 Microcontroller evaluation kitEtherCAT nodeEthernet connectionCAN node and microSD Card slot includedHardware compatible with compatible with 3.3V Arduino™ Shields • XMC4800	active and preferred
› KIT_XMC42_EE1_001	Microcontroller	CPU Board XMC4200 General Purpose - On-Board-Debugger - Pin Extension Board (UNI_EXT01-V2) - USB cable - Getting Started Flyer • XMC4200	active and preferred
› KIT_XMC44_EE1_001	Microcontroller	CPU Board XMC4400 General Purpose - On-Board-Debugger - Pin Extension Board (UNI_EXT01-V2) - USB cable - Getting Started Flyer • XMC4200 • XMC4500	active and preferred
› KIT_XMC45_EE1_002	Microcontroller	CPU Board XMC4500 General Purpose - J-Link Lite CortexM Debugger - Pin Extension Board (UNI_EXT01-V2) - USB cable - Getting Started Flyer • XMC4500	active and preferred
› KIT_XMC45_EE2_001	Microcontroller	CPU Board XMC4500 SDRAM - On-Board-Debugger - Pin Extension Board (UNI_EXT01-V2)- USB cable- Getting Started Flyer • IFX1763XEJ V33 • XMC4500-E144X1024 AC	active and preferred
› KIT_XMC45_RELAX_LITE_V1	Microcontroller	XMC4500 Microcontroller - Detachable on-board debugger - Power over USB - ESD and reverse current protection - 2 x user button and 2 x user LED - 4 x SPI-Master, 3x I2C, 3 x I2S, 3 x UART, 2 x CAN, 17 x ADC (12 bit), 2 x DAC, 31x PMW	active and preferred

		mapped on 2 Pin Headers 2 x 20 0.1" - Micro-USB plug • XMC4500	
› KIT_XMC45_RELAX_V1	Microcontroller	XMC4500 Microcontroller - Detachable on-board debugger - Power over USB - ESD and reverse current protection - 2 x user button and 2 x user LED - 4 x SPI-Master, 3x I2C, 3 x I2S, 3 x UART, 2 x CAN, 17 x ADC (12 bit), 2 x DAC, 31x PMW mapped on 2 Pin Headers 2 x 20 0.1" - Micro-USB plug - Ethernet PHY and RJ45 jack - Real Time Clock crystal - 32 Mbit Quad-SPI Flash - microSD card slot • XMC4500	active and preferred
› KIT_XMC4X_AUT_ISO_001	Microcontroller	Automation I/O Card (AUT_ISO-V1) - Power Supply (24V / 1A) • XMC4500	active and preferred
› KIT_XMC4X_COM_ETH_001	Microcontroller	Ethernet/CAN/RS485 Interface Card (COM_ETH-V1) • XMC4500	active and preferred
› KIT_XMC4X_HMI_OLED_001	Microcontroller	Standard Human Machine Interface Card (HMI_OLED-V1) - Headset • XMC4500	active and preferred
› KIT_XMC4X_MOT_GPDLV_001	Microcontroller	General Purpose Motor Drive Card (MOT_GPDLV-V2) • XMC4500	active and preferred
› KIT_XMC4X_UNI_EXT01_001	Microcontroller	Pin Extension Board (UNI_EXT01-V2) • XMC4500	active and preferred
› KIT_XMC45_AE1_002	Microcontroller	CPU Board XMC4500 General Purpose - Automation I/O Card (AUT_ISO-V1) - Standard Human Machine Interface Card (HMI_OLED-V1) - Ethernet/CAN/RS485 Interface Card (COM_ETH-V1) - J-Link Lite CortexM Debugger - Pin Extension Board (UNI_EXT01-V2) - Power	active and preferred

|		Supply (24V / 1A) - Headset - USB cable XMC4500	
› KIT_XMC14_BOOT_001	Microcontroller	XMC1400	active and preferred
› KIT_XMC45_BE1_002	Microcontroller	CPU Board XMC4500 General Purpose - Pin Extension Board (UNI_EXT01-V2) - USB cable - Getting Started Flyer XMC4500	
› KIT_XMC43_RELAX_ECAT_V1			active and preferred
› KIT_XMC12_BOOT_001	Microcontroller	The XMC1200 CPU Card (CPU-12 A-V1) houses the XMC1200 Microcontroller and a 2x30 pin edge for application expansion. This board along with application cards (e.g. LED Lighting Application Card) demonstrates the capabilities of XMC1200. The main use case for this board is to demonstrate the generic features of XMC1200 device including tool chain. The focus is safe operation under evaluation conditions. The board is neither cost nor size optimized and does not serve as a reference design. XMC1200	active and preferred
› KIT_XMC1X_AK_LED_001	Microcontroller	XMC1200	active and preferred
› DC-MOTORCONTR_BTN8982	Microcontroller, Motor Driver	The DC motor control shield from Infineon is one of the first high current motor control boards being compatible to Arduino as well as to Infineon's XMC1100 Boot Kit. It is capable of driving two uni-directional DC motors (half bridge configuration) or one bi-directional	on request

		DC motor (H-Bridge configuration). • BTN8982 • XMC1100 Boot Kit	
› EVAL_3KW_2LLC_C7_47	Gate Driver, Microcontroller, MOSFET	3.0kW Dual LLC Evaluation Board • 1EDI60N12AF • 2EDN7524R • 2N7002 • BAS 52-02V • BAT165 • BSC093N15NS5 • BSS316N • ICE2QR2280Z • IFX1763XEJ V33 • IFX1763XEJ V50 • IPW60R040C7 • XMC4400-F64K512 AB	coming soon
› EVAL_3KW_2LLC_C7_20	Gate Driver, MOSFET, Microcontroller	3.0kW Dual LLC Evaluation Board • 1EDI60N12AF • 2EDN7524R • 2N7002 • BAS 52-02V BAT165 • BSC093N15NS5 • BSS316N • ICE2QR2280Z • IFX1763XEJ V33 • IFX1763XEJ V50 • IPP60R040C7 • XMC4400-F64K512AB	coming soon
› KIT_XMCI45_LARIX_PINU_1		Quadrocopter demonstrator kit with 9-axis motion tracking, pressure sensor and authentication representation. Control via Bluetooth or radio transmitter.	coming soon
› EVAL-M1-1302_36-84A	Motor Driver, Microcontroller	This Kits is a compact and flexible 3-phase motor drive system solution platform with control card and power stage, powered by IRSM836-084A µIPM™ and XMC 1302.	on request

		- Equipped with IRSM836-084A µIPM™ - Equipped with µC XMC 1302 ARM® Cortex® M0 - iMOTION™ MADK complete Kit with control- and power-board	
› EVAL-M1-1302_05-84D	Motor Driver, Microcontroller	This Kits is a compact and flexible 3-phase motor drive system solution platform with control card and power stage, powered by IRSM505-084DA2 µIPM™ DIP and XMC 1302 - Equipped with IRSM505-065DA2 µIPM™-DIP - Equipped with µC XMC 1302 ARM® Cortex® M0 - iMOTION™ MADK complete Kit with control- and power-board	on request
› EVAL-M1-1302	Motor Driver, Microcontroller	High Performance Sensorless Motor Control Card - Equipped with µC XMC 1302 ARM® Cortex® M0 - iMOTION™ MADK motor control board	on request
› EVAL-M1-1302_36-45A	Motor Driver, Microcontroller	This Kits is a compact and flexible 3-phase motor drive system solution platform with control card and power stage, powered by IRSM836-045A µIPM™ and XMC 1302. - Equipped with IRSM836-045A µIPM™ - Equipped with µC XMC 1302 ARM® Cortex® M0 - iMOTION™ MADK complete Kit with control- and power-board	on request
› EVAL-M1-1302_05-65D	Motor Driver, Microcontroller	This Kits is a compact and flexible 3-phase motor drive system solution platform with control card and power stage, powered by IRSM505-065DA2 µIPM™ DIP and XMC 1302	on request

- Equipped with IRSM505-065DA2 µIPM™-DIP
- Equipped with µC XMC™ 1302 ARM® Cortex® M0
- iMOTION™ MADK complete Kit with control- and power-board

32-Bit Industrial Microcontroller based on ARM® Cortex®-M

Webcast on DAVE™ - Getting started with version 4.0
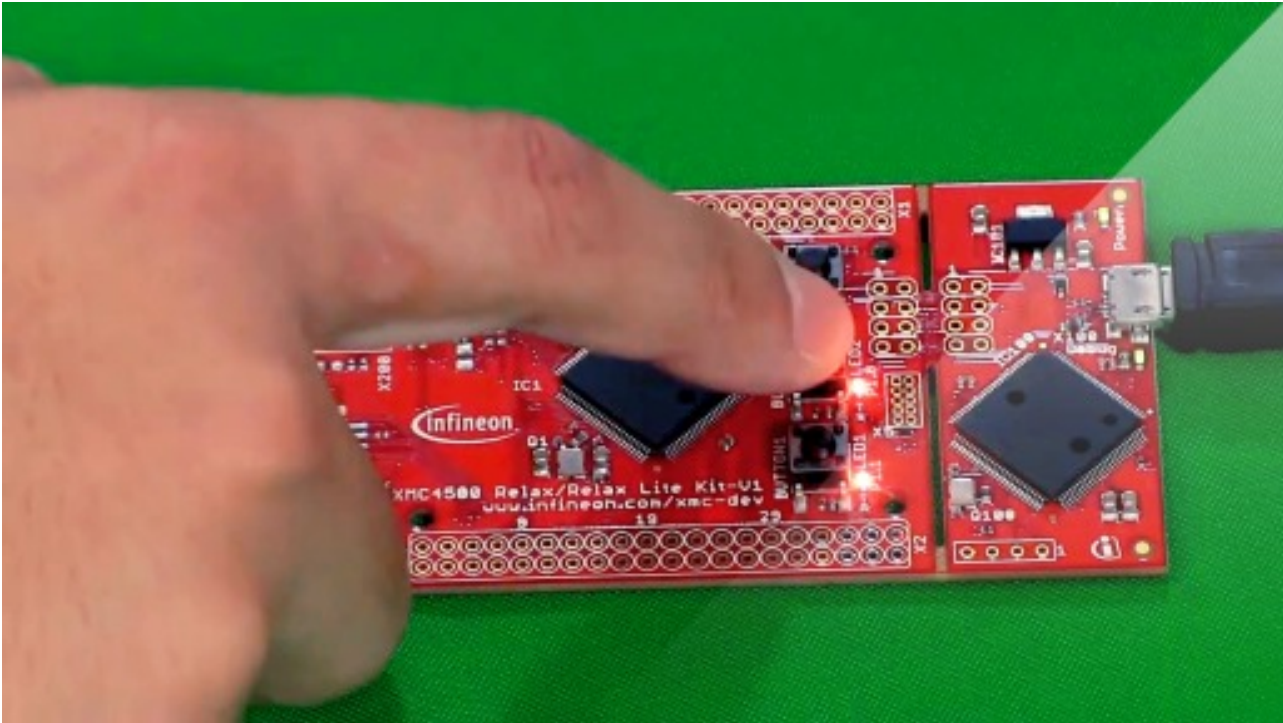
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Development of a full system solution: Multicopter - XMC 4500 – multicopter controllin[g]

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processed ...

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Development of a full system solution: Multicopter - Unfolding of a sensorless motor

A good Idea needs an efficient design and a fast manufacturing process to become reality. T[he]
MCI,thogehter with ...

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Microcontroller

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6. 绿色产品
7. Product Counterfeit Step 1

Infineon welcomes your comments and questions.

If you have any questions concerning our products, please fill out the following form. Your inquiry will be sent to the appropriate specialist who will be in touch with you as soon as possible.

You will receive a confirmation E-mail to validate your address in our system. Any attached file to the reply which will help to support your inquiry is highly appreciated.

First Name*

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E-Mail*

Phone

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Company*

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Company website (URL)

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Industry*

[please select] ▼

Other Industry

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Country*

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Preferred Distributor / Reseller*

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Other Distributor / Reseller

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Product Name*

32-Bit Industrial Microcontroller based on ARM® Cortex®-M

Estimated annual production volume (pieces) per year*

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Please post your technical question as detailed as possible*

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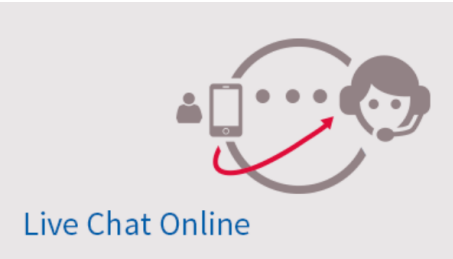
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Software

Title	Size	Date	Version
AP32289 - XMC1000/XMC4000 - Position Interface(POSIF) - Example Code › EN	4.8 MB	14 Sep 2015	01_01
AP32277 - XMC1000 - ASC Bootstrap Loader - Example Code › EN	20.5 MB	18 Apr 2016	01_03