



### **Product Brief**

# XMC4300 and XMC4800

## Microcontroller series with integrated EtherCAT®

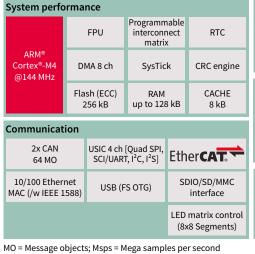
The XMC4300 and XMC4800 are the industry's first-ever Microcontrollers with integrated EtherCAT® node on an ARM® Cortex®-M processor with on-chip flash and analog/mixed signal capabilities. Thus enabling the most compact designs, both series require no additional components such as dedicated EtherCAT® ASIC, external memory or a quartz clock generator to start up the EtherCAT® slave controller. Designers benefit from BOM cost and PCB space savings.

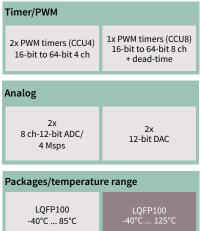
As both, XMC4300 and XMC4800 series, are member of the XMC4000 Microcontroller family with full pin and code compatibility, the XMC4300 and XMC4800 are designed to the same high quality and reliability standards as the rest of the family. The XMC4300 and XMC4800 enable EtherCAT® applications in harsh environments with 125°C ambient temperatures. In addition, they will be available through 2031 or longer.

## Key features

- > EtherCAT®, up to 6 CAN nodes, standard Ethernet MAC
- Cortex®-M4 at 144 MHz with large on-chip memories
- XMC4300: 256 kB Flash/128 kB RAM
- XMC4800: up to 2 MB Flash/352 kB RAM
- Qualified for 125°C automotive temperature range
- > Long-term availability through 2031 or longer

### XMC4300 series block overview





### Key benefits

- Most compact EtherCAT® design no additional external components required
- Bill of material (BOM) cost and PCB space savings
- Enablement of EtherCAT® technology in harsh environments with 125°C ambient temperatures
- Support of long product lifetime through availability to 2031 or longer

## XMC4300 series device overview

Product name	Feature set	Compatibility
XMC4300-F100F256; LQFP-100 -40°C-85°C XMC4300-F100K256; LQFP-100 -40°C-125°C	EtherCAT®, 256 kB Flash/128 kB RAM, 2x CAN nodes, standard Ethernet MAC	Pin compatible with all XMC4000 devices in LQFP-100. Code compatible with all XMC4000 devices.





# XMC4300 and XMC4800

# Microcontroller series with integrated EtherCAT®

### XMC4800 series block overview

System performance					
ARM® Cortex®-M4 @144 MHz	FPU		Programmable interconnect matrix		RTC
	DMA 12 ch		SysTick		CRC engine
		sh (ECC) to 2 MB	RAM up to 352 kB		CACHE 8 kB
Communication					
6x CAN 256 MO			[SPI/Dual I SPI, SCI/ <sup>2</sup> C, I <sup>2</sup> S]	Ether <b>CAT</b>	
10/100 Ethernet (/w IEEE 1588		USB (F	S OTG)	SDIO/SD/MMC interface	
External memo					

Timer/PWM						
4x PWM timers (CCU4) 16-bit to 64-bit 4 ch	2x PWM timers (CCU8) 16-bit to 64-bit 8 ch + dead-time	2x POSIF (Position interface)				
Analog						
4x 8 ch 12-bit ADC/ 4 Msps	2x 12-bit DAC	4x ΔΣ Demodulator				
Packages/temperature range						
LQFP100 -40°C 85°C	LQFP144 -40°C 85°C	LFBGA196 -40°C 85°C				
LQFP100 -40°C 125°C	LQFP144 -40°C 125°C	LFBGA196 -40°C 125°C				

MO = Message objects; Msps = Mega samples per second

### XMC4800 series device overview

Product name	Feature set	Compatibility	
XMC4800-F100F1024; LQFP-100 -40°C-85°C XMC4800-F100K1024; LQFP-100 -40°C-125°C	EtherCAT®, 1 MB Flash/200 kB RAM, 6x CAN nodes, standard Ethernet MAC	Pin compatible with all XMC4000 devices in LQFP-100. Code compatible with all XMC4000 devices.	
XMC4800-F100F1536; LQFP-100 -40°C-85°C XMC4800-F100K1536; LQFP-100 -40°C-125°C	EtherCAT®, 1.5 MB Flash/276 kB RAM, 6x CAN nodes, standard Ethernet MAC		
XMC4800-F100F2048; LQFP-100 -40°C-85°C XMC4800-F100K2048; LQFP-100 -40°C-125°C	EtherCAT®, 2 MB Flash/352 kB RAM, 6x CAN nodes, standard Ethernet MAC		
XMC4800-F144F1024; LQFP-144 -40°C-85°C XMC4800-F144K1024; LQFP-144 -40°C-125°C	EtherCAT®, 1 MB Flash/200 kB RAM, 6x CAN nodes, standard Ethernet MAC	Pin compatible with all XMC4000 devices in LQFP-144. Code compatible with all XMC4000 devices.	
XMC4800-F144F1536; LQFP-144 -40°C-85°C XMC4800-F144K1536; LQFP-144 -40°C-125°C	EtherCAT®, 1.5 MB Flash/276 kB RAM, 6x CAN nodes, standard Ethernet MAC		
XMC4800-F144F2048; LQFP-144 -40°C-85°C XMC4800-F144K2048; LQFP-144 -40°C-125°C	EtherCAT®, 2 MB Flash/352 kB RAM, 6x CAN nodes, standard Ethernet MAC		
XMC4800-E196F1024; LFBGA-196 -40°C-85°C XMC4800-E196K1024; LFBGA-196 -40°C-125°C	EtherCAT®, 1 MB Flash/200 kB RAM, 6x CAN nodes, standard Ethernet MAC		
XMC4800-E196F1536; LFBGA-196 -40°C-85°C XMC4800-E196K1536; LFBGA-196 -40°C-125°C	EtherCAT®, 1.5 MB Flash/276 kB RAM, 6x CAN nodes, standard Ethernet MAC	Upwards pin compatible with all XMC4000 devices in LFBGA-144. Code compatible with all XMC4000 devices.	
XMC4800-E196F2048; LFBGA-196 -40°C-85°C XMC4800-E196K2048; LFBGA-196 -40°C-125°C	EtherCAT®, 2 MB Flash/352 kB RAM, 6x CAN nodes, standard Ethernet MAC		

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