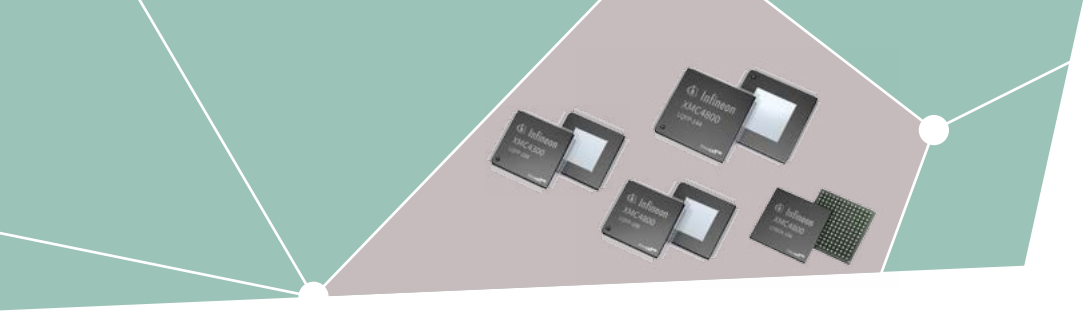


Product Brief

# 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.

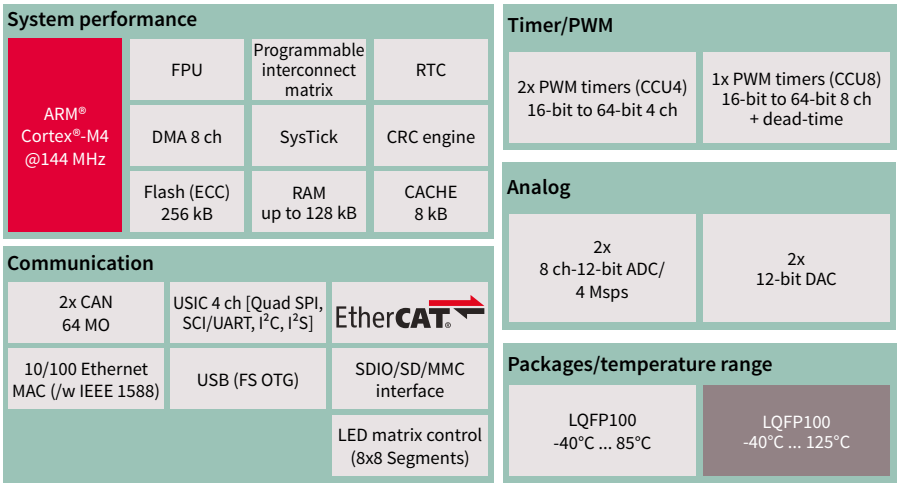
### Key features

- 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

### 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

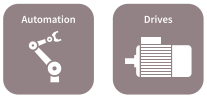
### XMC4300 series block overview




MO = Message objects; Msps = Mega samples per second

### XMC4300 series device overview

| Product name | Feature set | Compatibility |
|---|---|---|
| XMC4300-F100F256; LQFP-100 -40°C–85°C<br>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. |




www.infineon.com/ethercat

# 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 |
| | Flash (ECC) up to 2 MB | RAM up to 352 kB | CACHE 8 kB |

**Communication**

| | | |
|---|---|---|
| 6x CAN 256 MO | USIC 6ch [SPI/Dual SPI/Quad SPI, SCI/ UART, I²C, I²S] | EtherCAT® |
| 10/100 Ethernet MAC (/w IEEE 1588) | USB (FS OTG) | SDIO/SD/MMC interface |
| External memory interface (EBU) | | |

**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<br>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<br>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<br>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<br>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<br>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<br>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<br>XMC4800-E196K1024; LFBGA-196 -40°C–125°C | EtherCAT®, 1 MB Flash/200 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-E196F1536; LFBGA-196 -40°C–85°C<br>XMC4800-E196K1536; LFBGA-196 -40°C–125°C | EtherCAT®, 1.5 MB Flash/276 kB RAM, 6x CAN nodes, standard Ethernet MAC | |
| XMC4800-E196F2048; LFBGA-196 -40°C–85°C<br>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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