MPC5746R Microcontroller
Ultra-Reliable MCUs based on Power Architecture® Technology.

Product One-Sheet

Get Sample  Data Sheet  Tools

Multi-core Performance – High performance and integration for enhanced powertrain/motor control use cases within a power envelope of previous-generation MCUs.

Scalability – Scalable flash, core configurations and packaging options for a range of industrial and automotive applications.

Advanced Timers and ADCs – eTPU timers and sigma-delta ADC converters allow for advanced filtering using on-chip knock hardware.

Functional Safety – AEC-Q100 qualification testing and lockstep cores help support ASIL-D and SIL-1 functional safety (ISO26262/IEC61508) requirements.

Features
- AEC-Q100 Grade1, Ta 125°C
- Ethernet
- Precision eTPU Timers and ADC
- Ultra-Reliable MCU

Orderable Samples

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Temp Range</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC5746RK1MMT5</td>
<td>-40°C to 125°C</td>
<td>252 MAPBGA</td>
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<tr>
<td>SPC5745RK1MLU3</td>
<td>-40°C to 125°C</td>
<td>176 LQFP</td>
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<tr>
<td>SPC5743RK1MLQ5</td>
<td>-40°C to 125°C</td>
<td>144 LQFP</td>
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Document Number: MPC5746RFS REV 0

MPC5746R Specifications

- Flash: Up to 4 MB
- Timer/PWM: 64-ch. eTPU, 32-ch. eMIOS
- RAM: Up to 256 KB
- Cores: Up to 2 x z4 (1 in LS)
- Speed: Up to 200 MHz/core
- Op Range: 3.0 V - 5.5 V
- Temp: -40°C to 125°C (ambient)

MPC5746R Block Diagram

Success Stories
- Transmissions
- Engine management
- Hybrid and electric motors

Target Applications
- Engine control units (ECU)
- Electric DC motor control
- Ethernet connectivity
- Aerospace engines
- Safety critical applications

Enablement Tools
- Evaluation boards:
  - MPC5746R-252DS 252-pin adapter
  - MPC5746R-176DS 176-pin adapter
  - MPC5746R-144DS 144-pin adapter
  - MPC57XXXMB motherboard
- S32 Design Studio (S32DS)
- NVM/Flash drivers
- AUTOSAR MCAL drivers (SDK)
- GreenHills, Wind River (Diab)
- Lauterbach
- iSystem
- P&E Micro, PLS