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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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78K0 CAN subseries

Product Letter

μ PD78F0822B
 μ PD780821/22B

8-bit Microcontroller

Description

The μ PD780822/21B (CAN ASSP3+) is an application specific 8-bit microcontroller designed for automotive dashboard applications. Part of NEC's 78K0 series of microcontrollers, CAN ASSP3+ offers 16 MHz performance, 120 Kbytes embedded single-voltage Flash and 5 Kbytes RAM along with 4 stepper motor drivers, sound generator and LCD controller.

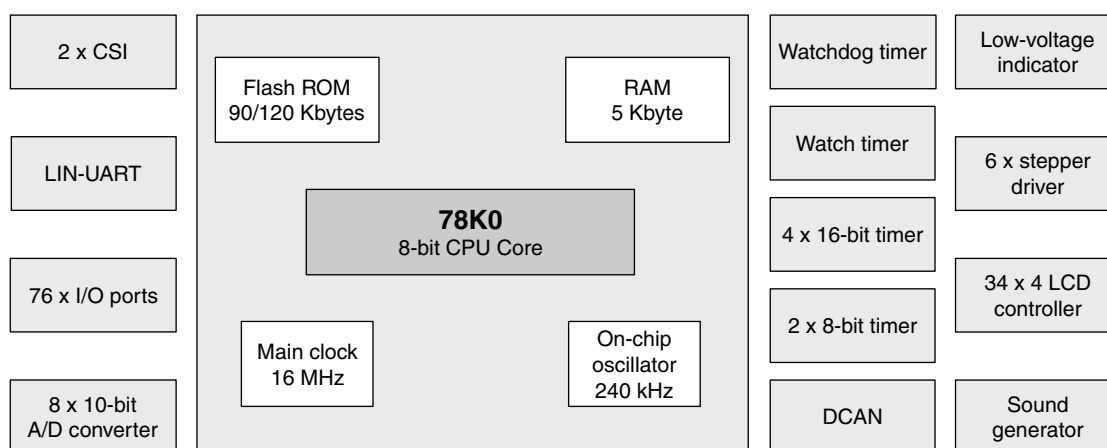
Applications

The integration of 4 stepper motor drivers make CAN ASSP3+ ideal for driver information systems such as instrument clusters. Moreover, CAN ASSP3+ is suitable for industrial applications where CAN functionality is combined with control oriented peripherals, in particular high-drive output capabilities.

Features

- 8-bit CISC CPU core
- 16 MHz max. clock frequency (plus 240 KHz internal ring oscillator)
- Real-time clock support via 37.768 KHz
- 120 Kbytes single-voltage Flash with secure self-programming support
- 90/120 Kbytes Mask ROM
- 5 Kbytes RAM
- DCAN interface
- 4 x 16-bit timer and 2 x 8-bit timer, providing up to 5 PWMs
- Watch timer, watchdog timer
- Low voltage indicator
- 2 x CSI (3-wire and 2/3-wire selectable)
- 1 x LIN-UART
- 8 x 10-bit A/D converter
- Sound generator
- 4 x stepper motor driver
- 34 x 4 LCD controller
- 76 I/Os
- Supply voltage: 4.0 - 5.5 V
- Operating temperature: -40 to +85°C
- Package: 100-pin QFP

Block Diagram



μ PD78F0822B μ PD780821/22B 8-bit Microcontroller

Ordering Information

Devices

Part Number	Internal ROM	Package
UPD78F0822BGC(A)-8EA	120 Kbytes Flash	100-pin QFP (14 x 14 mm, 0.50 mm pin pitch)
UPD780822BGC(A)-8EA	120 Kbytes Mask ROM	100-pin QFP (14 x 14 mm, 0.50 mm pin pitch)
UPD780821BGC(A)-8EA	90 Kbytes Mask ROM	100-pin QFP (14 x 14 mm, 0.50 mm pin pitch)
UPD78F0822BGF(A)-3BA	120 Kbytes Flash	100-pin QFP (14 x 20 mm, 0.65 mm pin pitch)
UPD780822BGF(A)-3BA	120 Kbytes Mask ROM	100-pin QFP (14 x 20 mm, 0.65 mm pin pitch)
UPD780821BGF(A)-3BA	90 Kbytes Mask ROM	100-pin QFP (14 x 20 mm, 0.65 mm pin pitch)

Tools

Description	Order Number (GC-package)	Order Number (GF-package)
IECUBE In-circuit emulator	QB-780822-ZZZ-EE	
Exchange adapter	QB-100GC-EA-02T	QB-100GF-EA-02T
ICE connector	QB-100GC-YQ-01T	QB-100GF-YQ-01T
Target connector	QB-100GC-NQ-01T	QB-100GF-NQ-01T
Extension probe	QB-144-EP-01S	QB-144-EP-01S
Mount adapter	QB-100GC-HQ-01T	QB-100GF-HQ-01T
Space adapter	QB-100GC-YS-01T	QB-100GF-YS-01T
Check pin adapter	QB-144-CA-01	QB-144-CA-01
IAR Workbench 8-bit (compiler, assembler, linker, debugger, project manager, editor)	EW78K-FULL-EE	
IAR-Dongle (parallel port interface)	IAR-DONGLE	
IAR-Dongle (USB interface)	IAR-DONGLE-USB	
Flash programmer	PG-FP4-E	
Flash adapter	FA-100GC-8EU-A	FA-100GF-3BA-A

Documentation

Doc reference	Doc type
U16985E	UPD780822 Subseries User's Manual
U12326E	78K/0 Series Instruction Manual
U10903J	78K/0 Series Instruction Table
U10904J	78K/0 Series Instruction Set

For further information on NEC's 78K controllers visit our European website at www.ee.nec.de/78k

Contact

European Headquarters:

NEC Electronics (Europe) GmbH
 Arcadiastr. 10, 40472 Düsseldorf, Germany
 Tel. +49 211 65030
 Fax +49 211 6503-1327
www.ee.nec.de

Offices in Europe:

www.ee.nec.de/europe

Distributors in Europe:

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