MCK28335 DSC MOTION CONTROL KITS
MSK28335 DSC MOTION STARTER KITS

DESIGN ENVIRONMENTS FOR TMS320F28335 – THE FIRST FLOATING-POINT DSC

STATE-OF-THE-ART DEVELOPMENT TOOLS FOR DIGITAL MOTION CONTROL

The Technosoft MCK28335 and MSK28335 are complete motion control development and evaluation kits, based on the TMS320F28335 floating-point digital signal controller (DSC). These advanced kits represent ideal environments for the design, development and implementation of digital motion control applications.

The MCK28335 kit is a complete DSC development platform that comes with a power module and a brushless motor, representing the perfect tool for digital motion control solutions design.

The MSK28335 kit is the best DSP development platform for users that already have the power module and motor, and want to develop their motion control software application.

To quickly develop and test motion control algorithms, the MSK28335 DSC board uses the 150 MIPS computational power of the TMS320F28335, combined with a double-event manager able to drive up to 18 PWM and 16 A/D converters. The embedded CAN interface may be used to connect the board to multiple-axis structures.

The MCK28335 and MSK28335 kits can be connected to a PC via an RS232 interface to download, execute and debug the software applications without the need of other hardware devices.

MSK28335 DSC Motion Starter Kit
- ✓MSK28335 DSC board
- ✓Processor evaluation software
- ✓DMCD28x-Lite with assembler and linker
- ✓User's Guide

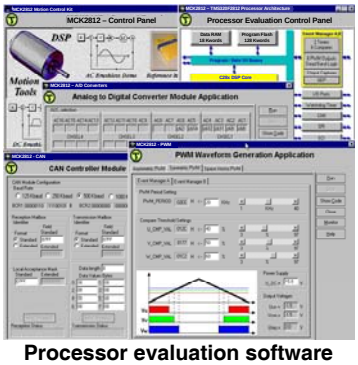
MCK28335 DSC Motion Control Kit
- ✓MSK28335 DSC Motion Starter Kit
- ✓PM50 Power module (50W)
- ✓Brushless motor with Hall sensors and 500-line encoder
- ✓Motion Control Demos
- ✓User's Guide

MSK28335 DSC board – Hardware specifications

- **DSC controller TMS320F28335 operating at 150 MHz**
- **256 K word on-chip Flash program memory**
- **34 K word on-chip data/program of RAM memory**
- **128 K word on-board data/program of RAM memory**
- **RS-232 serial communication port**
- **Opto-isolated CAN communication interface**
- **Standard I/O connector (3.3V – MC-BUS) for simultaneous links with two power modules**
- **Access to 58 individually programmable GPIO DSP pins**
- **16 channels of 12-bit accuracy A/D inputs**
- **2 channels of 12-bit accuracy D/A outputs**
- **DSP address / data expansion bus connector**
- **Single DC power supply: 5 V**
- **Dimensions: 104 x 63 mm**

GRAPHICAL EVALUATION OF DSP DIGITAL MOTOR CONTROL

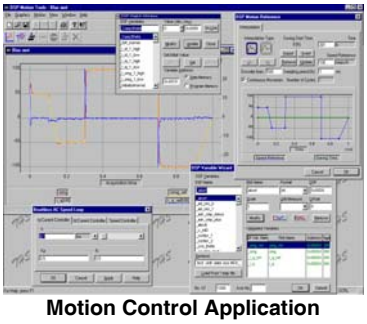
The MCK28335 and MSK28335 DSC development kits contain a comprehensive software packages for the DSP controller evaluation and basic development (assembler, linker and debugger), integrated under a Windows IDE platform. A set of ready-to-run demos (with C/ASM source code) is provided. Tests for timers, PWM, I/O, A/D functions are available at a click of the mouse.



Processor evaluation software

MOTION CONTROL APPLICATIONS

Demos for AC and DC brushless motor speed control are included in the MCK28335 DSC kit. The dynamic behavior of the real-time system can easily be analyzed through an extended graphical display of all system variables. Speed and current controller parameters can be modified on-line, which allows the quick optimization of control algorithms.



Motion Control Application

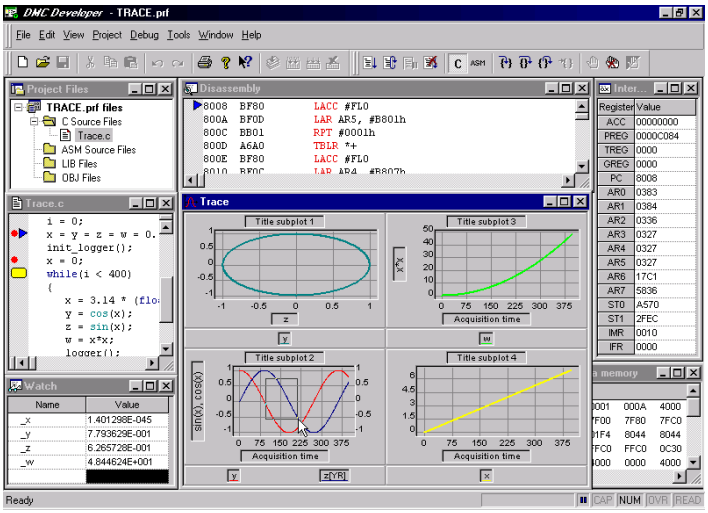
TECHNOSOFT
MOTION DESK

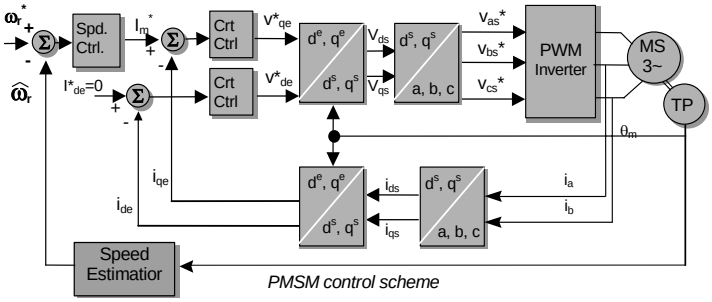
PROFESSIONAL KITS

DMCD28x–PRO, DIGITAL MOTION CONTROL DEVELOPER

The MSK28335 / MCK28335 Pro kits include DMCD28x-Pro, the Technosoft advanced software platform, which allows the development of motor control applications in a Windows IDE environment, while providing:

- Real-time debugging through serial interface
- Breakpoints, single step execution, stopping and start of current program
- Project management system
- Advanced reference generator
- True real-time data storage logger with advanced graphical IDE. Graphical control panel for on-line data visualization and motion parameter setting
- Observe/Edit global variables during debugging
- View/Edit of data and program memory contents of the DSC target board
- Full disassembly window for C and assembly code
- Usable with TI assembler, linker and C-compiler





PMSM control scheme

DMCODE, MOTOR CONTROL SOURCE CODE LIBRARIES

MCK28335 Kits C Pro-S(BL/IM) include complete digital motion control application source code, fully documented, for the speed control of a brushless or induction motor. Options are:

DMCode-S(BL) plug-in for DMCD28x-Pro is a complete source code for brushless motor speed control:

- Trapezoidal mode (BLDC)
- Sinusoidal mode (PMSM – vector control)

DMCode-S(IM) plug-in for DMCD-Pro is a complete source code for induction motor speed control:

- Vector control
- V/f mode

These applications are structured as projects for the DMCD28x-Pro platform.

Starting with a complete, ready-to-run platform, the user will manage in a very efficient way the changes at hardware or software level, which can be controlled in a 'one-change-at-a-time test validate' manner.

The code is developed mainly in C language with some specific functions in assembler.

MATLAB™-compatible versions of the DMCode libraries are also available, with **Simulink™** models for the motor control structure. One can easily simulate the system behavior and validate the control scheme performances. Then, you can use the C-code generator feature of MATLAB, and obtain the corresponding C-code, compile, download and test it on the DSC module. The **VisSim™** library is also available. Please contact us for details.

COMPATIBILITY WITH TEXAS INSTRUMENTS SOFTWARE TOOLS

TI software tools (C/C++ compiler, assembler and linker) are fully compatible with all MSK2833x DSC Motion Starter Kits and MCK2833x DSC Motion Control Kits.

Order List

Part No.	Description
24TKI83001	**MSK28335 DSC Motion Starter Kit** ✓ MSK28335 DSC board ✓ Processor evaluation software ✓ DMCD28x-Lite, Digital Motion Control Developer Lite
24TKI83003	**MSK28335 Pro** ✓ MSK28335 DSC Motion Starter Kit ✓ DMCD28x-Pro, Digital Motion Control Developer Pro
24TKI83212	**MSK28335 Kit C Pro** ✓ MSK28335 Pro Kit ✓ TI C/C++ Compiler/Assembler/Linker (TMS320F28x)
24TKI83011	**MCK28335 DSC Motion Control Kit** ✓ MSK28335 DSC Motion Starter Kit ✓ PM50, 3-phase, 36V, 2.1A, MOSFET inverter ✓ Brushless motor with Hall sensors & 500-line encoder ✓ Motion Control Applications
24TKI83112	**MCK28335 Kit A Pro** ✓ MCK28335 DSC Motion Control Kit ✓ DMCD28x-Pro, Digital Motion Control Developer Pro
24TKI83312	**MCK28335 Kit C Pro** ✓ MCK28335 Pro Kit ✓ TI C/C++ Compiler/Assembler/Linker (TMS320F28x)
24TKI83313	**MCK28335 Kit C Pro-S(BL)** ✓ MCK28335 Kit C Pro ✓ DMCode-S(BL), Source Code Speed Control library for Brushless Motor
24TKI83315	**MCK28335 Kit C Pro-S(IM)** ✓ MSK28335 C Pro + ACPM750E + Induction Motor ✓ DMCode-S(IM), Source Code Speed Control library for Induction Motor
24TKI83316	**MCK28335 Kit C Pro-MS(BL)** ✓ MCK28335 Kit C Pro ✓ DMCode-MS(BL), MATLAB-Simulink Position / Speed Control library for Brushless Motor
24TKI83317	**MCK28335 Kit C Pro-MS(IM)** ✓ MSK28335 C Pro + ACPM750E + Induction Motor ✓ DMCode-MS(IM), MATLAB-Simulink Position / Speed Control library for Induction Motor
24TKI83318	**MCK28335 Kit C Pro-VS(BL)** ✓ MCK28335 Kit C Pro ✓ DMCode-VS(BL), VisSim Control library for BL Motor
24TKI83319	**MCK28335 Kit C Pro-VS(IM)** ✓ MSK28335 C Pro + ACPM750E + Induction Motor ✓ DMCode-VS(IM), VisSim Control library for IM Motor

TI Third Party Network Member

DSP TEXAS INSTRUMENTS

Headquarters
SWITZERLAND
Tel.: +41 32 732 5500
Fax: +41 32 732 5504
sales@technosoftmotion.com
GERMANY
Cell: +49 (0)171 30 49 382
Tel.: +49 (0)2248 90 98 314
Fax: +49 (0)2248 90 98 315
sales.de@technosoftmotion.com
BENELUX
Tel.: +32 (0)14 21 13 21
Fax: +32 (0)14 21 13 23
sales.be@technosoftmotion.com
EASTERN EUROPE
Tel.: +40 (0)21 425 90 95
Fax: +40 (0)21 425 90 97
sales.ro@technosoftmotion.com
UNITED STATES
Tel.: +1 734 667 5275
Fax: +1 734 667 5276
sales.us@technosoftmotion.com
www.technosoftmotion.com