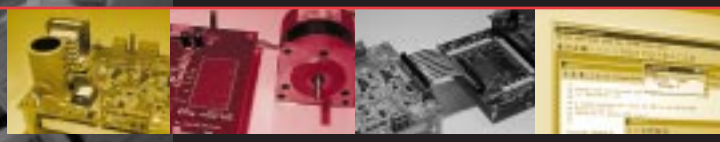
BR3045/D
REV. 1

Put Motion Control in *Fast Forward*



Development Tools for Motion Control

Maximizing your development team's output

Motorola simplifies motor control applications with highly integrated microcontrollers (MCUs) and Digital Signal Processors (DSPs) optimized for motor control. But we don't stop there. These devices, collectively referred to as the Motorola's embedded motion control portfolio, are supported by a comprehensive and scalable development environment. This environment allows your team to concurrently approach hardware, software, and system level engineering, maximizing the output of your development team and minimizing your time to market.

Meeting the requirements of the modern developer means supplying comprehensive system solutions, encompassing advanced hardware and software tools. Our software tool offerings include sophisticated integrated development environments (IDEs), motion control visual analysis tools, and an embedded software development kit (SDK). In addition to a broad array of processor evaluation kits and emulation tools, Motorola supports it's motion control portfolio with an extensive complement of modular motion control development hardware. With such a comprehensive, scalable tools solution, development is fast, simple and efficient.

Digital DNA™ from Motorola

The Tools Solution that fits Your Needs

Software Development Tools

Integrated Development Environment

Motorola offers two integrated development environment (IDE) solutions to meet varying market needs. The 68HC08 MCU family is supported by the MCUez Windows Based IDE with editor, assembler, debugger, and simulator. Highly efficient C compilers are available from numerous third party tool vendors. Motorola's DSP56800 family is supported by the powerful Metrowerks CodeWarrior® software IDE. CodeWarrior® for Motorola DSP is a windows based IDE that includes an Optimizing ANSI C compiler, assembler and linker, project management system, editor and code navigation system, debugger, simulator, scripting, and source control and third party plug in interface.

Motion Control Visual Analysis

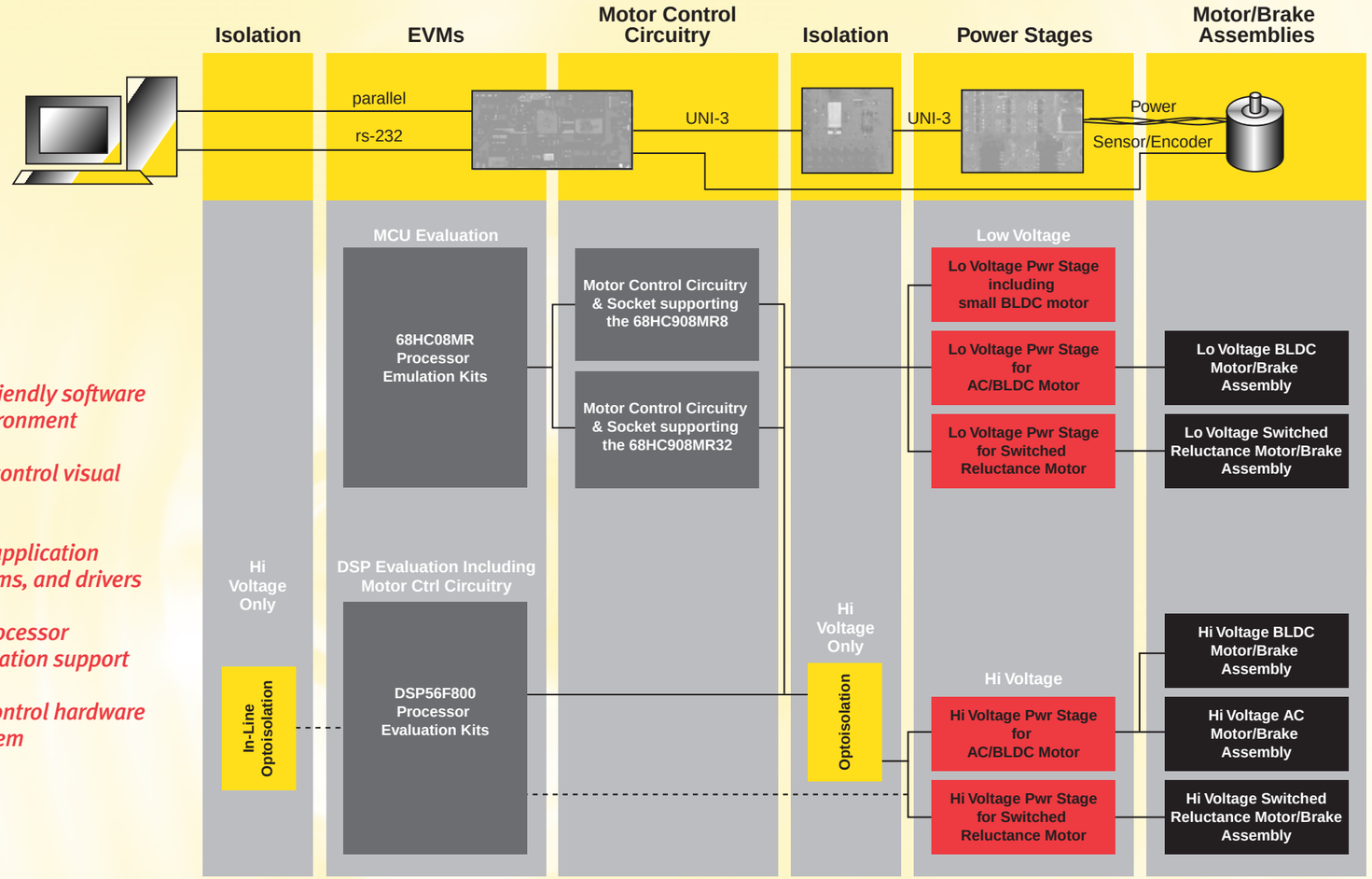
Motorola offers a PC based visual analysis tool for the embedded motion control developer, known as PC-Master. PC-Master enables motion control developers to interact with software running on the target or evaluation hardware, view and set variables, and graphically display variables and motion profile information all in a real time minimally intrusive fashion.

Embedded Software

To enable rapid prototyping and fast time to market, Motorola provides an embedded software development kit (SDK). The embedded SDK is a self-installing set of software drivers, functional libraries, algorithms, software services, applications, and documentation that supports the motion control portfolio. Software drivers and functional libraries allow developers to generate efficient and portable code without an in-depth knowledge of individual processor architecture or peripheral design. Algorithms, applications and documentation allow the embedded designer to focus on value added IP. Standard application programming interfaces enable the embedded motion control developer to migrate among processor architectures, thus maximizing their software investment.

Motorola Embedded Motion Control Hardware Components

- *sophisticated, C-friendly software development environment*
- *graphical motion control visual analysis tool*
- *production ready application software, algorithms, and drivers*
- *comprehensive processor evaluation & emulation support*
- *modular motion control hardware development system*



Hardware Development Tools

Processor Evaluation Kits

Motorola provides comprehensive processor evaluation kits that provide an exceptional "out of the box" experience, containing the tools required to quickly begin processor evaluation. Each evaluation kit includes MCUez® software or a trial version of our CodeWarrior IDE, a full-featured processor evaluation board with emulation, required cables, power supplies and complete documentation. The evaluation kits fully interoperate with our Modular Motion Control Development Hardware.

Emulation Hardware

A complete line of advanced emulation hardware is available for the DSP56800 solutions. These enable you to perform sophisticated non-intrusive debug and trace functions. Our full complement of software development tools fully integrate with our emulation hardware. The DSP controllers use an industry standard JTAG port that is connected to the host computer using what is referred to as a command converter.

Modular Motion Control Development Hardware

Recognizing the varying needs of the embedded motion control designer, Motorola offers multiple motion control specific hardware cards designed with the flexibility to meet your system requirements. Based on a standard interconnect method, termed UNI-3, the hardware cards can be configured in a multitude of ways allowing you to rapidly prototype a motor control application or match Motorola's fully tested components with your own custom hardware. Note that the modular motion control development hardware is interoperable with our MCU and DSP processor evaluation kits allowing complete system development.

For those customers looking for advanced evaluation solutions, Motorola offers a cost-efficient motor control evaluation kit containing a low voltage power stage and a brushless DC motor which utilizes the UNI-3 interconnect method to interface with any MCU or DSP processor evaluation kit.

For those embedded designers seeking a more flexible development solution, Motorola also provides low voltage and high voltage power stages. These power stages support all major motor types including AC induction, brushless DC, and switched reluctance.

Motorola provides two different isolation solutions when developing in a high voltage environment. The ECOPT works with both the DSP controller and MCU solutions and provides isolation between the processor cards and the power stage cards. The ECOPTINL provides isolation between the DSP controller processor evaluation cards and your host system. It isolates the JTAG and RS232 lines and supports both the use of the processor evaluation cards on board JTAG command converter and the use of an external command converter. This solution is tuned for higher performance demands and only supports the DSP controllers.

The motor/brake assemblies integrate together a motor, an optical encoder, a variable brake, and a speed sensor system. High voltage AC induction as well as both low & high voltage brushless DC and switched reluctance motors are available. These motor/brake assemblies are fully interoperable with our power stage and processor evaluation kits.

Order Information:

Software Development Tools

Integrated Development Environments		*ETA*†
CE-DSP3.5	• Metrowerks for Motorola DSP IDE supporting Motorola's DSP56800 family	Q2 2000*
Software		
MSW3SDK000AA	• Embedded SDK for use on our DSP based products. Includes the PC-Master tool.	Q2 2000*
TBD ***	• Embedded SDK for use on our MCU based products. Includes the PC-Master tool.	Q4 2000

Hardware Development Tools

Processor Evaluation Kits		*ETA*†
DSP56F807EVM	• Evaluation kit for DSP56807 processor	Q1 2001
DSP56F805EVM	• Evaluation kit for DSP56805 processor	Q2 2000
DSP56F803EVM	• Evaluation kit for DSP56803 processor	Q2 2000
DSP56F801EVM	• Evaluation kit for DSP56801 processor	Q4 2000
M68ICS08MR	• Low-Cost in-circuit simulator & programming kit for the 68HC08MR family	Q2 2000
KITMMEVS08MR32	• Cost-effective real-time in-circuit emulator kit for the '908MR32/16	Q3 2000
KITMMDS08MR32	• High performance real-time in-circuit emulator kit for the '908MR32/16	Q3 2000
KITMMEVS08MR8	• Cost-effective real-time in-circuit emulator kit for the '908MR8/08MR4	Q4 2000
KITMMDS08MR8	• High performance real-time in-circuit emulator kit for the '908MR8/08MR4	Q4 2000

Emulation Tools		*ETA*†
DSPCOMMAND	• Emulation support for DSP56F80X processors. Requires ISA slot.	Now
DSPCOMMPARALLEL	• Emulation support for DSP56F80X processors. Requires parallel port.	Now
DSPCOMMANDPCI	• Emulation support for DSP56F80X processors. Requires PCI slot.	Now **
DSPCOMMETHERNET	• Emulation support for DSP56F80X processors. Requires Ethernet network.	Now **

Modular Motion Control Development Hardware		*ETA*†
ECCTR908MR32	• Motor control specific circuitry & processor socket designed to interface with any 68HC08MR Processor Evaluation Kit supporting the 68HC908MR32	Q2 2000
ECCTR908MR8	• Motor control specific circuitry & processor socket designed to interface with any 68HC08MR Processor Evaluation Kit supporting the 68HC908MR8	Q4 2000
ECSKT908MR32	• Processor socket supporting the 68HC908MR32	Q4 2000
ECSKT908MR8	• Processor socket supporting the 68HC908MR8	Q4 2000
ECMTREVAL	• Motor Control specific evaluation hardware including a low voltage power stage with small BLDC motor	Q2 2000
ECLOVACBLDC	• Low Voltage power stage card supporting AC and BLDC motors	Q3 2000
ECLOVSR	• Low Voltage power stage card supporting SR motors	Q3 2000
ECOPTHIVACBLDC	• High Voltage power stage card supporting AC and BLDC motors and an optoisolation card	Q3 2000
ECOPTHIVSR	• High Voltage power stage card supporting SR motors and an optoisolation card	Q3 2000
ECINLHIVACBLDC	• High Voltage power stage card supporting AC and BLDC motors and an in line optoisolation card	Q3 2000
ECINLHIVSR	• High Voltage power stage card supporting SR motors and an in line optoisolation card	Q3 2000
ECOPT	• Optoisolation between power stage and processor evaluation or controller cards	Q3 2000
ECOPTINL	• Optoisolation between host computer and DSP evaluation or customer target cards	Q3 2000
ECMTRLOVBLDC	• Low Voltage BLDC motor with integrated encoder and variable load	Q3 2000
ECMTRLOVSR	• Low Voltage SR motor with integrated encoder and variable load	Q3 2000
ECMTRHIVBLDC	• High Voltage BLDC motor with integrated encoder and variable load	Q3 2000
ECMTRHIVAC	• High Voltage AC motor with integrated encoder and variable load	Q3 2000
ECMTRHIVSR	• High Voltage SR motor with integrated encoder and variable load	Q3 2000

† Estimated Time of Availibility
* Consult www.motorola.com/semiconductor/motor for most current revision
** Consult Metrowerks for Codewarrior software support
*** Part number to be determined upon availability

Technical Support:
www.motorola.com/semiconductors/support
1-800-521-6274

Website:
www.motorola.com/semiconductors/motor

Literature Distribution Center for Motorola:
1-800-441-2447

Other Inquiries:
Contact your Motorola sales representative or authorized distributor

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