

ST7MC-KIT/BLDC

Softec's complete motor control starter kit for ST7MC

Data brief

Features

- Motor control board
 - Motor and board input power stage
 - Optoisolation board
 - Auxiliary power supply and voltage rectification
 - Push buttons, trimmers for standalone operation
 - Hall sensor input
 - Three-phase outputs to motor
 - Tachometer input for closed-loop controlled AC motors
 - 10-pin ICC connector for in-circuit programming and in-circuit debugging
 - Prototyping area
 - RS-232 connector
- Control panel software
 - Parameter configuration for BLDC and 3phase induction motors
 - Basic settings interface for configuring motor, start-up and real time parameters
 - Advanced settings interface for configuring frequency, speed range, stop conditions, etc.
 - Outputs header files for your application taking into account modifications to the configuration
- STXF-INDART/USB
 - 10-pin ICC connection
 - USB connection to host PC
 - Two breakpoints
 - Advanced breakpoints on data, access type, access range, stack.

Description

The Softec motor control starter kit for ST7MC (ST ordering code: ST7MC-KIT/BLDC) is an integrated system designed to provide you with a complete, ready-to-use motor control application for the ST7MC family of microcontrollers. It allows real-time control of three-phase brushless DC and AC motors in all control topologies from a PC-based GUI, or in standalone operation.

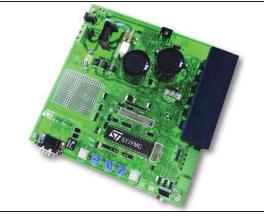
The control panel software provides an easy-touse interface to configure, start and run the motor, modify parameters and evaluate ST7FMC motor control features, then generate header files for your own motor control application.

The kit also comes with the STXF-INDART/USB in-circuit debugger/programmer and STVD7 integrated development environment that allow you to take advantage of the ST7FMC's on-chip resources for in-circuit programming and in-circuit debugging.

For further information about the motor control starter kit, please refer to www.st.com/mcu, or the Softec internet site www.softecmicro.com.

For more information about inDART in-circuit debuggers/programmers, please refer to the *ST7xxxx-INDART Data Brief*.

Figure 1. Motor control starter kit for ST7



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For further information contact your local STMicroelectronics sales office.

Starter kit architecture 1

1.1 Motor control evaluation board

Application board with ST7FMC, built-in power stage and optoisolation board, is designed to directly drive AC and DC motors. It also includes USART/LIN, EEPROM, potentiometers, sensor inputs for your application.

1.2 **Brushless DC motor**

The included 24 VDC motor is ready for direct connection to the motor control evaluation board.

1.3 **Control panel**

Graphical user interface on your host PC that allows you start up and run the motor in just minutes, then fine tune parameters and output header files for your own application.

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	Pin Holp			
			Aor Settings	
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	2/	 C Sensor 120° 		C Open Loop
	C Other BLPMDC Motor	C Sensor 60*	C Vollage Discont Limitation 0.22	Closed Loo
			p Settings-	1992
	Alignment phase	Acceleration phase		
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	Final Duty Dycln 72.8	Duty Lycle	72.8 章北	
	Alignment Duration 1250 🛫	ms Current	2 14	es at end of ramp
	Current	Number of Z ever	Elei	ctrical 32.5 H
		auto switched mo	de 12 🖭 ris	quertoy -
		Step number with	out Z detection 2 🔮 Tot	al Duration 653 ms
PMDC Advanced Settings	The second se			
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Complementary PWM Signal Disabled	and anothing	ficient (Ki)	10 0 Hz	Motor Over-Current
Dead Times 4	μs Alter D Blanking Window 5 💌 μs	Coefficient (Kp) 20	
PwM Distribution	Z Event Counter Filter 1		30 Reported Gurrent Land	Bus Over-Voltage
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T3-T6 0 0 0 T5-T4 0 0 0				Germonor stated
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	Bpm D Event Counter Filter 1			
MaxMechanical Speed	Bpm C All Hardware			
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unent Loop	C All Software			
Current Blanking Window 0.5	us Demogratization Time 450 🚖 µs	-		
usent Event Counter Filter				
Maximum Alouned Current 3				

•

1000 • KHz

Grounded *

ampling Pa

Sampling Clock (ISCF)

Unused MCIx Input

Stop Condition © Free Wheeling

C DC Current Braking

-

OK

Cancel



1.4 STXF-INDART/USB

In-circuit debugging and in-circuit programming tool that provides the hardware interface with the host PC via USB and with your ST7FMC via 10-pin in-circuit communication (ICC) connection.

1.5 STVD7 for inDART

Integrated development environment for writing, building and debugging your application.

1.6 Optoisolation board

Board with two 10-pin ICC connectors (In/Out) provides galvanic isolation between the incircuit debugging/programming tool and any target board supplied by high voltage. It is included with the motor control starter kit, or can be ordered separately (ST ordering code: ST7-ICC/OPTOISOL).

1.7 Induction motor

240V/800W Selni three-phase induction motor for use with the motor control starter kit using induction motor default values (for evaluation purposes). It is not included with the kit, but can be ordered separately (ST ordering code: ST7MC-MOT/IND).



2 ECOPACK[®]

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3 Revision history

Table 1.Document revision history

Date	Revision	Changes
30-Aug-2005	1	Initial release.
17-Nov-2011	2	Document formatting updated.



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