STR-ECS640A-GEVK: 600V BLDC Motor Control Development Kit

The ecoSpin ^{TM} ECS640A Motor Control Development Kit is available for customers to easily develop code for off-line variable-speed BLDC motor systems in the 50-600W range @230Vac. The Evaluation Board (EVB) can also be configured for 120Vac for up to 150W systems.

For quick spin-up and debug, the ecoSpin ^{TM} board ships with Direct Torque Flux Control software loaded onto the ecoSpin ^{TM} device and a GUI for motor/parameter/performance evaluation.
The Strata Product Developer Studio and collateral are available to allow the user to download and program sensorless trapezoidal control example libraries. A separate GUI is provided to interface to the board while running trapezoidal control of a BLDC motor. The GUI interfaces are described in further detail in the GUI User Interface Manual.

The ecoSpin ^{TM} Development Kit CMSIS-Pack includes two levels of drivers and example code for the microcontroller peripherals that are available in ECS640A. The micro peripheral drivers are available in two levels: a hardware abstraction layer (hw_drv_) and a comprehensive peripheral driver layer (drv_). Both driver offerings are provided in a CSIS

Wakeup Timer, and Watchdog Timer), and the analog peripherals. The Trapezoidal project can be used as a reference to allow for rapid code development to your specific motor and application. A base SDK is also available to allow customers to develop their own Trapezoidal, Sine, or FOC commutation code. Direct Torque and Flux Control (DTFC) from Theta Power Systems, International (TPSI) is loaded in the EVB when shipped, to allow for customer evaluation. DTFC firmware allows optimal motor performance on the Arm Cortex-M0+ platform. Customers will need to directly license DTFC code from Theta Power Systems, Intl.

Please contact onsemi Sales for more information.

Features and Applications

Features

- User Interface - "Easy to Use" Windows-based interface simplifies code development and reduces TTM
- Motor Connections - U,V,W outputs
- Motor Feedback - Speed sensorless with optional GPIO inputs for hall sensors
- Communications - SPI, USB*, Jlink*, I2C, UART
- Status - 3 User LEDs

Input, motor over-current and under-voltage protection
- Power Input - AC connector with inrush protection and onboard fuse

Evaluation/Development Tool Information

Product	Status	Compliance	Short Description	Parts Used	Action
STR-ECS640A-GEVK	Active	Pb-free	600V BLDC Motor Control Development Kit	NFMECS640A0	Buy

Technical Documents

Type	Document Title	Document ID/Size	Rev
Application Notes	Nebo Family Programming Manual	AND9980/D - 1026 KB	3
Eval Board: Manual	STR-ECS640A-GEVB Evaluation Board User's Manual	EVBUM2816/D - 2676 KB	1
Data Sheet	Sensorless BLDC ecoSpin Motor Controller, with Gate Drivers Arm® Cortex®-M0+, 600 V, FAN73896	ECS640A/D - 2152 KB	P1

Manual	Platform - Quick Start		
Eval Board: Manual	STR-ECS640A-GEVB PCB Layout	STR-ECS640A-GEVB_PCB_LAYOUT - 4672 KB	0
Eval Board: Manual	STR-ECS640A-GEVB Block Diagram	STR-ECS640A-GEVB_BLOCK_DIAGRAM - 103 KB	0
Eval Board: Schematic	STR-ECS640A-GEVB Schematic	STR-ECS640A-GEVB_SCHEMATIC - 2093 KB	0
Software	ecoSpin DTFC Interface_v1.1.15	ecoSpin DTFC Interface_v1.1.15 - 58481 KB	0

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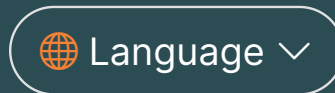
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