

STEVAL-IHM039V1

Dual motor drive control stage based on the STM32F415ZG microcontroller

Data brief

Features

- Two fully featured MC connectors for interfacing with any of the possible STMicroelectronics's evaluation power boards
- JTAG, SWD and trace debug support
- Mini-USB connector for isolated virtual COM port
- USB 2.0 full speed connection
- 240 x 320 TFT color LCD
- Joystick with 4 LEDs and 4-direction control and selector
- Reset plus three user buttons
- Five 5 V power supply sources: 2-way screw connector, power jack,
- 2 USB connectors (one isolated)
- Boot from user Flash or system memory
- CAN 2.0 A/B compliant connection
- I²C connection
- RS-232 channel with RTS/CTS handshake support
- Extension connectors for daughterboard or wrapping area board
- RoHS compliant

Description

The STEVAL-IHM039V1 demonstration board is a control stage based on STMicroelectronics's ARM™ Cortex™-M4 core-based STM32F415ZGT6 microcontroller featuring single and dual motor control.

It can be used together with the STM32 PMSM single/dual FOC SDK v3.2 and two of the possible STMicroelectronics's evaluation power boards provided with MC connectors for a complete dual



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motor control evaluation and development platform.

With dedicated hardware features, the STEVAL-IHM039V1 demonstration board is designed to help developers to evaluate ST devices and to develop their own applications.

1 Schematic diagram

Figure 1. Extension & I2C_IOS Connectors

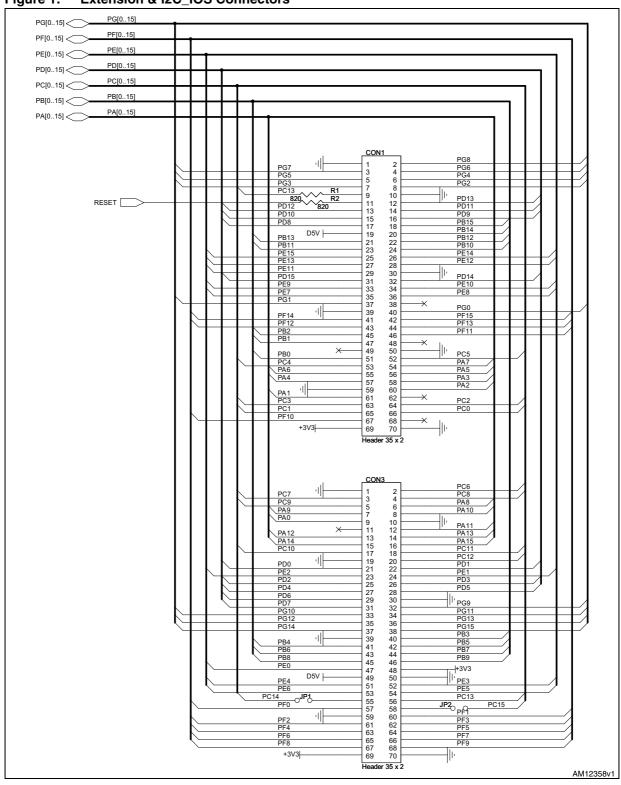


Figure 2. Joystick button and LCD

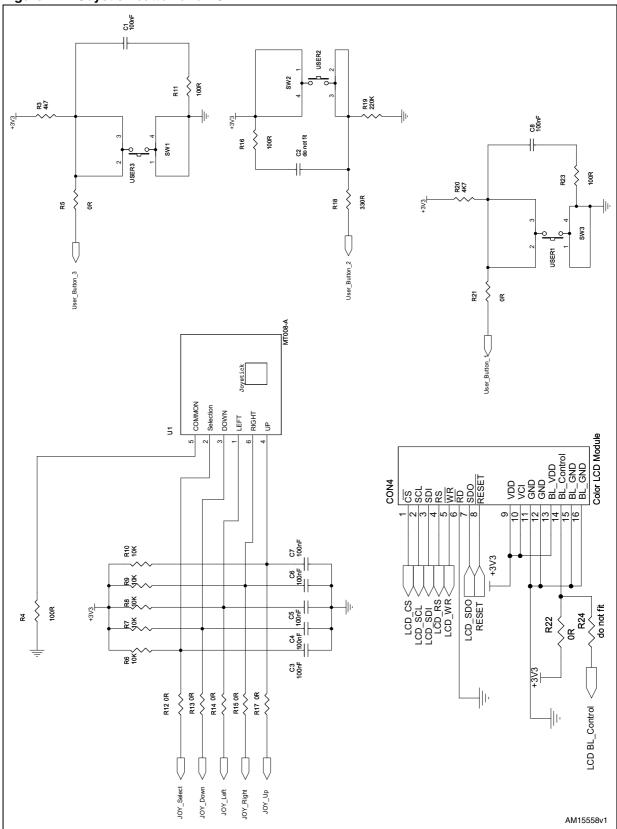


Figure 3. JTAG SWD and trace

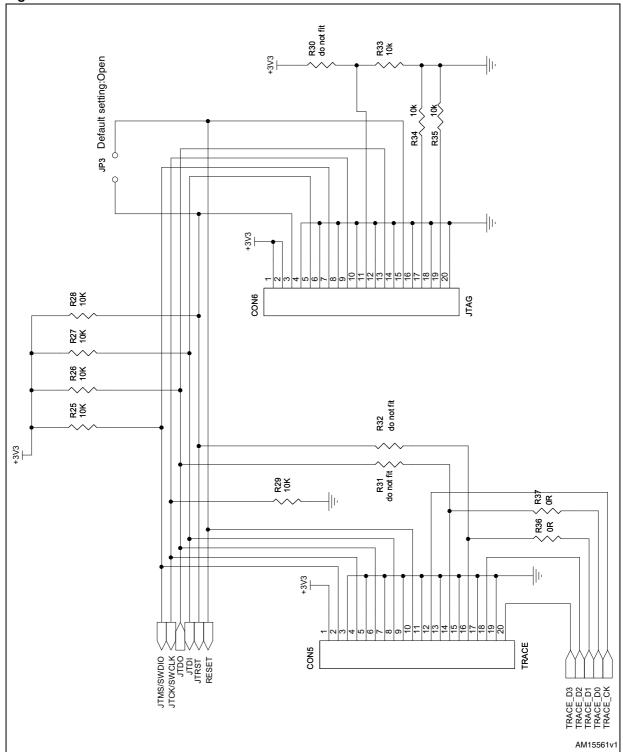


Figure 4. **MC** connector MAI MC_Main Bus Voltage MC_Main PFC_OCP MC_Main PFC_Vac MC_Main PFC_lac R44 do not fit R47 do not fit R42 100K R C13 do not fit || 5 ප 22nF 443 \$ 4.7K R R40 MC_Main Speed Sensor C 83 100 4 C19 do not fit 33 ⊢ 4HIII | CAN Motor control connector NTC BYPASS RELAY
DISSIPATIVE BRAKE
+5V POWER Hea C18 C17 do not fit Default JP4
setting:Open JUMPER C21 __10nF MC_Main NTC Bypass relay MC_Main Dissip. brake MC_Main Speed Sensor A MC_Main Speed Sensor A MC_Main Speed Sensor B MC_Main_PWM_UL MC_Main_PWM_VL MC_Main_PWM_VL MC_Main_PWM_WL MC_Main_PWM_WL 156 176 838 3.3K

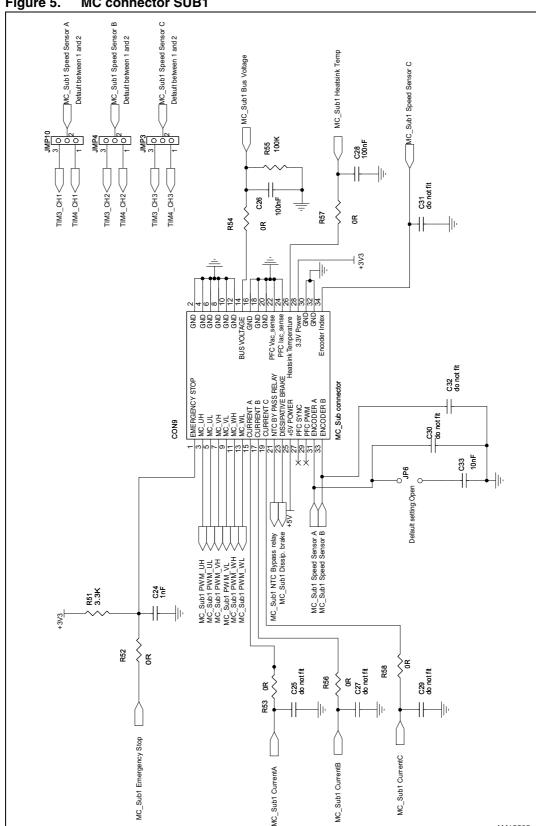
R45 0R

MC_Main CurrentA

622 86 not fit R48 OR C14 do not fit

MC_Main PFC Sync

AM15564v1



MC connector SUB1 Figure 5.

AM15565v1

Figure 6. Peripheral (1 of 2)

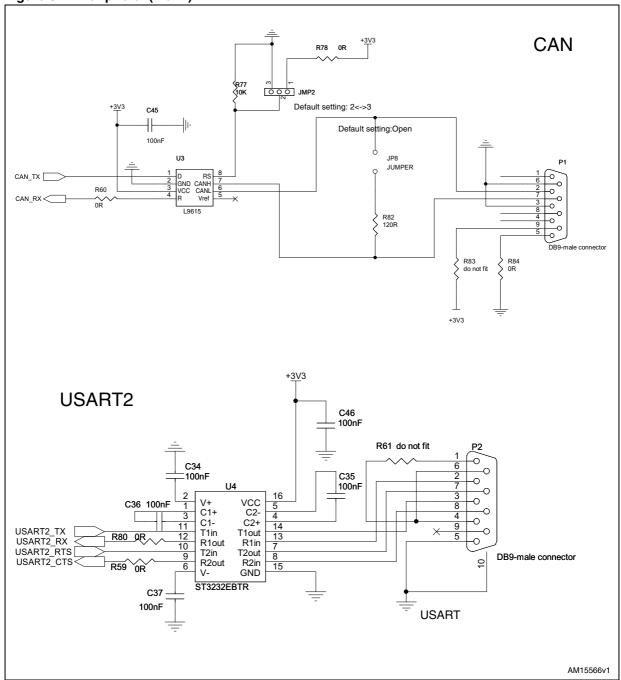


Figure 7. Peripheral (2 of 2)

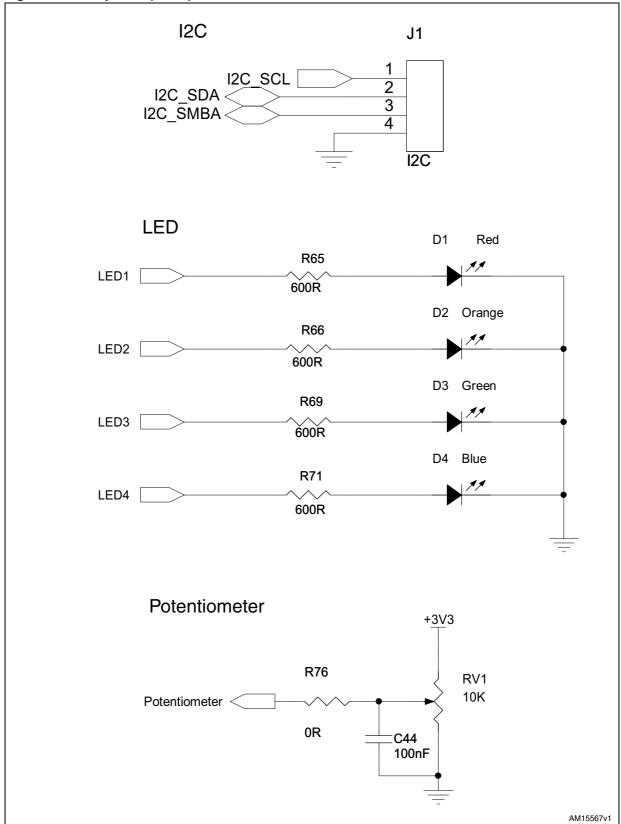


Figure 8. Power (1 of 2)

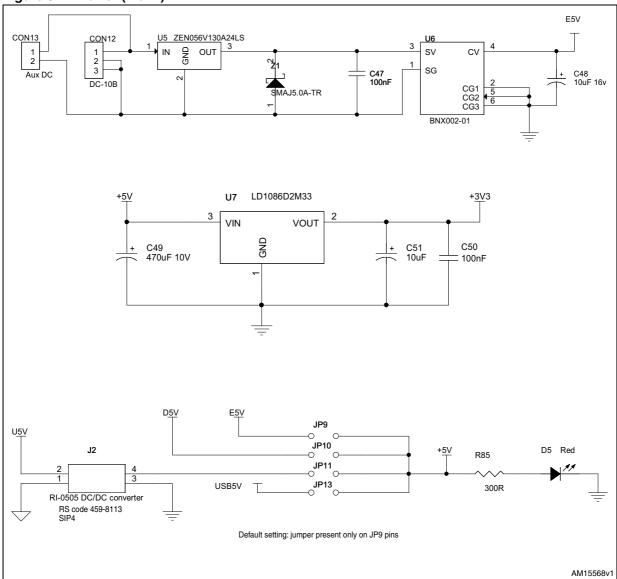


Figure 9. Power (2 of 2)

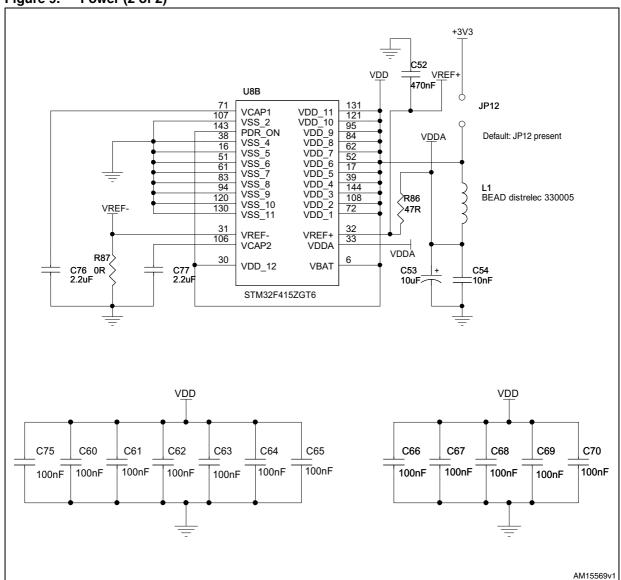


Figure 10. STM32 MC

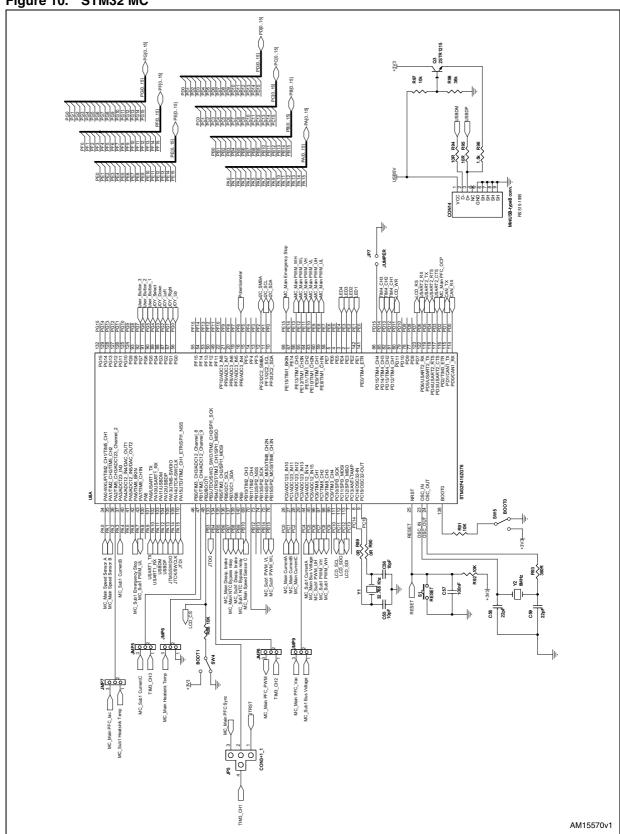
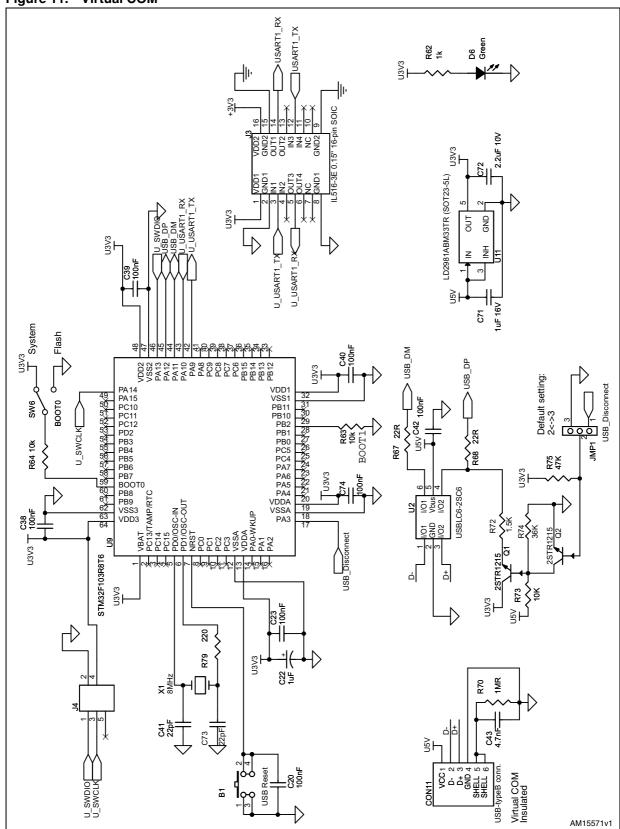


Figure 11. Virtual COM



STEVAL-IHM039V1 Revision history

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
16-Jan-2013	1	Initial release.

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