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EVAL-L9907

EVAL-L9907 Evaluation Board



Features

- Supply voltage range (VBatt): 6 V÷54 V
- Load Current Capability up to 20 A
- Device control and diagnostic via SPI
- Flexible shunt configuration (Phase U+PhaseV or PhaseU+Total Phase)
- 4 LEDs for monitoring VBatt, Vcc, EN1 and EN2 signal
- Input signal connector compatible with SPC56 Discovery boards. A different microcontroller board can be connected by a simple adaptor or wire
- Total accessibility to all pins by test points
- Modular PCBs design to easily change the external Power MOS both SMD and throughhole Power MOS
- Possibility to connect external USB adapter for the SPI communication
- Possibility to use external Boost components by removing jumpers

Description

The EVAL-L9907 is designed to provide the user with a platform for the evaluation of the L9907 device. The Board provides all the main input/output capabilities necessary to drive a BLCD motor and provide also diagnostic functionalities. L9907 is fully integrated 3-phase pre-driver with integrated booster capable to drive all kind of Power MOS transistors in 3-phase BLDC motor applications up to 54 V. The integrated boost regulator provides sufficient gate charge to driver Power MOS down to 6 V. The circuit is suitable to operate in environments with high supply voltage such as double battery in 48V systems.L9907 is able to control independently the six pre-driver channels to implement all kind of electric motor control strategies, with the possibility to select among 4 gate output current levels while the application is running. All output channels are protected against short circuit.L9907 is equipped with 2 current sense amplifiers. The gain and output offset voltage of each current sense amplifier can be configured by SPI to allow max flexibility for phase or ground current sense strategy. L9907 is protected against over-temperature and shoot through events.The EVAL-L9907 can be plugged directly to SPC560P-DISP Discovery+ board and using the L9907 demonstration software it is possible to implement a 3 Phase Brush-less Motors control.

Product status link
EVAL-L9907

Order code	References
EVAL-L9907	L9907 Evaluation board

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1 System requirements, HW and SW resources

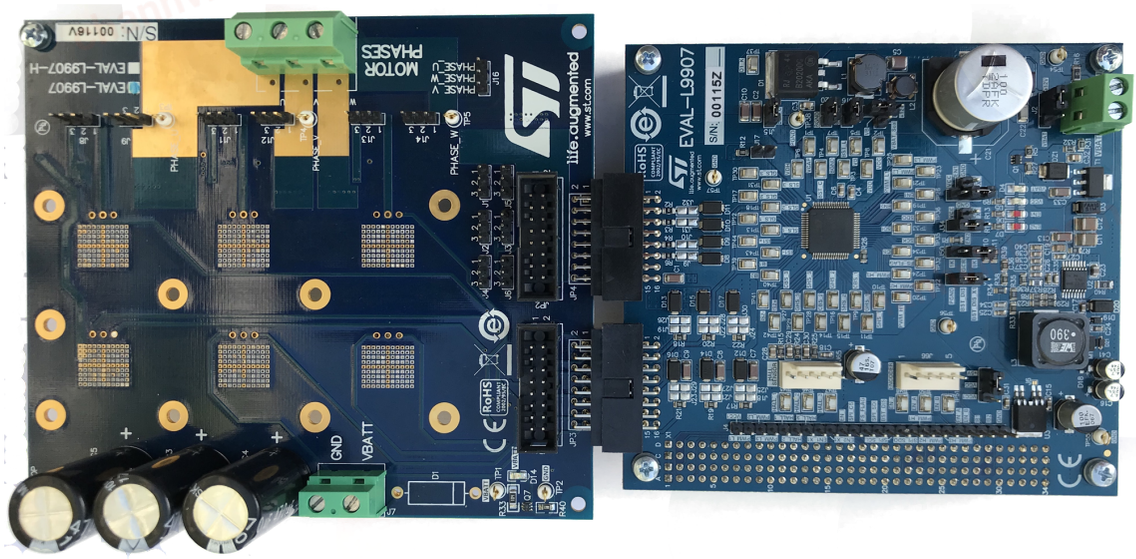
1.1 System requirements

- Power Supply: 6 V ÷ 54 V; up to 20 A
- SPC560P-DISP discovery board or microcontroller board able to offer SPI signals, manage 2 EN and 6 PWM signals, 2 ADC inputs for current sensing and +5 V or 3,3 V (Vcc)

1.2 Development tool chain

- Graphic User Interface: Labview
- Software development environment (in connection with SPC5 MCUs): SPC5Studio
- Hardware set-up:
  - Board stand alone Figure 1
  - PC Graphic User Interface -SPC560P-DISP (dedicated Firmware) - EVAL-L9907 Figure 2
  - Any SPC56 Discovery + Application Examples (within SPC5 Studio) + EVAL-L9907 Figure 3

Figure 1. EVAL-L9907 evaluation board

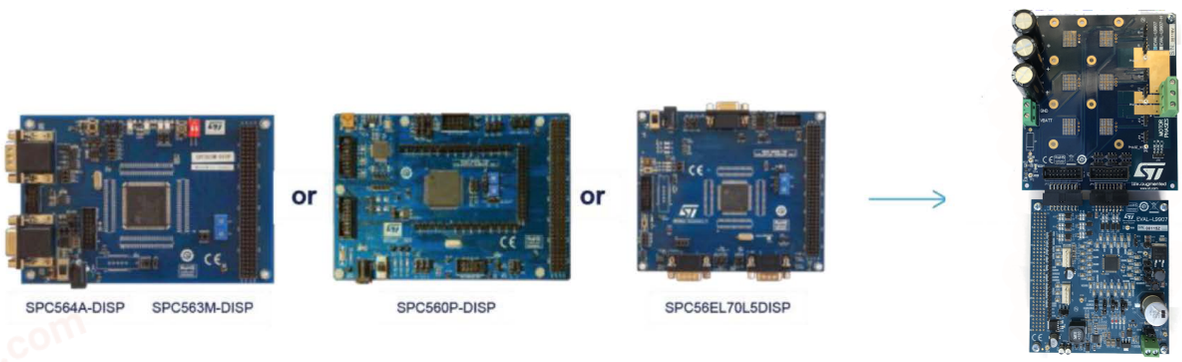


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Figure 2. **SPC560P-DISP (dedicated firmware) - EVAL- L9907**



Figure 3. **SPC56 discovery + application examples + EVAL- L9907**



1.3 Demonstration software

Demonstration software is available on ST web site for free download, www.st.com

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Revision history

Table 1. Document revision history

Date	Revision	Changes
09-Sep-2014	1	Initial release.
08-Sep-2016	2	Updated figure in the cover page, Figure 1: EVALL9907 Evaluation Board, Figure 2: SPC560PDISP (dedicated Firmware) - EVAL-L9907 Figure 3: SPC56 Discovery + Application Examples + EVAL-L9907 Added web link in Section 1.3: Demonstration software.
10-Jan-2019	3	Updated figure in cover page. Updated Figure 1: EVAL-L9907 Evaluation Board; Figure 2: SPC560P-DISP (dedicated Firmware) - EVALL9907, Figure 3: SPC56 Discovery + Application Examples + EVAL-L9907.
09-Apr-2019	4	Updated: Figure in cover page; Figure 1. EVAL-L9907 evaluation board; Figure 2. SPC560P-DISP (dedicated firmware) - EVAL- L9907; Figure 3. SPC56 discovery + application examples + EVAL- L9907.

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