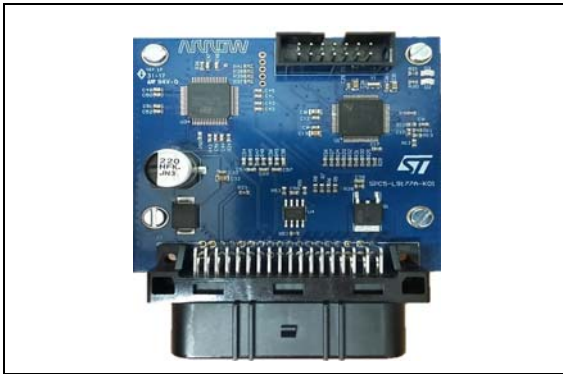## Small Engine EFI (Electronic Fuel Injection) Reference Design

Data brief

Features

Microcontroller SPC572L64F2

- One main 32-bit Power Architecture® VLE compliant CPU core, single issue
- Single-precision floating point operations
- Generic timer module (GTM101)
  - Intelligent complex timer module
  - 72 channels (16 input and 56 output)
- 1568 KB on-chip RWW flash memory
- Supporting EEPROM emulation (32 KB)
- 64 KB general-purpose data SRAM
- Two deserial serial peripheral interface (DSPI) modules
- Enhanced analog-to-digital converter system with
  - Three 12-bit SAR analog converters
  - One 16-bit Sigma-Delta analog converters
- On-chip voltage regulator controller manages the supply voltage down to 1.2 V for core logic
- Self-Test capability
- Package: eTQFP80

Peripheral on chip engine control: L9177A

- Supply voltage from 6 V to 18 V

- 5V regulator up to 300 mA with thermal shutdown protection in current limitation condition
- 5 V tracking regulator up to 40 mA and short to battery protection
- 5 V standby regulator up to 2.5 mA
- 2 channels injectors drivers (Ron 0.6Ω @ 150 °C)
- Stepper motor driver
- 2 sensor heater
- Protected high side driver
- Full diagnosis by SPI
- Protection for STB, STG (for stepper motor drivers and tracking regulator)
- Self-configuring variable reluctance sensor interface
- K-line transceiver
- Microcontroller reset logic
- Package: eTQFP64 10 x 10 mm exposed pad down

PCB

- Size:70x65mm
- Connector: 34 pin (2x17)
- JTAG Port 14 pin (2/7, pitch 0.1")
- K-Line port
- 1 CAN Port
- 1 Integrated Watchdog IC

Description

The SPC5-L9177A-K01 provides a reference design to evaluate a complete solution to control one or two-cylinders internal combustion engine for Mid-End and Low-End Application (e.g. small motorcycle, portable generator, agriculture, nautical engines, etc.).

For further information contact your local STMicroelectronics sales office.

www.st.com

1 Development toolchain

SPC5Studio v5.7

2 Board distribution

The board is distributed through Arrow Electronics.

For orders refer to

https://www.arrow.com/en/reference-designs/spc5-l9177a-k01-small-engine-efi-electronic-fuel-injection-reference-design-for-spc572l-mcu-and-l9177a-driver/e8b89294db9a3f2491d1c0f29d3a6b8c

3   Revision history

Table 1. Document revision history

Date	Revision	Changes
7 -Feb-2018	1	Initial release.
23-Feb-2018	2	Added *Chapter 2: Board distribution*.
12-Apr-2018	3	In *Chapter 2: Board distribution* updated the Arrow web site link.
02-Jul-2018	4	As revision history error typo

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