
How to properly activate normal mode on L99MC6GJ

Introduction

The **L99MC6GJ** IC is a highly flexible monolithic medium current output driver that incorporates 3 dedicated low-side outputs (channels 4 to 6) and 3 independently self-configuring outputs (channels 1 to 3) that can be used as either low-side or high-side drivers.

The device can work as per two operating modes:

- Standby mode
- Normal mode

The aim of this technical note is to recommend a way for ensuring that the normal mode is properly activated.

For more details please refer to the relevant datasheet online.

1 Normal mode

In normal mode all functions are available and the device is controlled by the ST SPI interface.

Normal mode is activated by SPI command (CTRL_0 register, bit 7 = EN = 1).

Normal mode must be activated only after proper supplies (i.e. battery voltage on DRN1 pin when high-side configuration is used and a voltage supply, 3.3 V or 5 V, on VCC pin) are applied to L99MC6 as reported in the relevant datasheet and after the register configuration is set.

Normal mode must be activated only after the proper charge pump condition as well as the bridge mode are set, both of them are hardware-dependent.

Configuration is defined by hardware use of [L99MC6GJ](#): the charge pump will be required to be ON if any channels are used as high-side drivers. Instead, the charge pump must be OFF if all channels are low-side drivers.

Normal mode active allows any activation on any channels according to SPI command. Overcurrent recovery strategy can be changed during normal mode.

This is the recommended sequence to follow for activating normal mode:

1. Apply all power supplies: battery on DRN1 (vs operating supply voltage), needed only if the high-side configuration is used, and V_{CC}.
2. Prepare register configuration for the hardware used: charge pump and bridge modes. If V_{CC} rises from less than 2 V after the DRN1 rising, the default configuration will be set as charge pump active and bridge mode disabled.
3. Enable normal mode
4. Activate channels

The failure to comply with the recommended initialization sequence may result an unpredictable behavior of outputs and diagnostics.

2 Conclusions

This technical note describes the recommended way for configuring [L99MC6GJ](#) in normal mode. A detailed description of the hardware configuration (e.g. operating supply voltage, charge pump, bridge mode) is provided in the present document.

Revision history

Table 1. Document revision history

Date	Version	Changes
15-Jan-2020	1	Initial release.

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