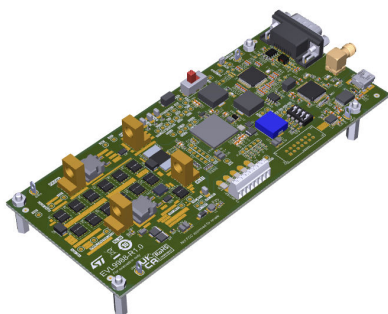


EVL9988 promotional board based on L9988 device for battery managements system



Product status link

[EVL9988](#)

Product summary

Order code	EVL9988
Reference	EVL9988 promotional board

Features

- Measurement of 4 single-cell voltages, with over/undervoltage detection
- Measurement of stack voltage, with over/undervoltage detection and plausibility check vs. sum of cells
- Measurement of battery current (range ± 1500 A), with overcurrent protection
- Measurement of Coulomb counting for SoC estimation
- Continuous short-circuit detection
- Passive cell balancing (max 200 mA) supporting time-continuous and PWM modes, with synchronized odd-even channels balance
- Measurement of battery pack temperature through an external NTC, with OT/UT detection
- Configurable double watchdog (Q&A WD and time-windowed WD)
- Separate the charge (CHG) and discharge (DCHG) control paths by integrating a dual high-side VGS pre-driver: one channel drives the discharge high-side driver, while an external pre-driver independently controls the charge high-side driver
- Integrated PMIC with configurable regulators (BOOST, VCORE, VCC, CAN, VSTBY, VTREF regulators)
- The possibility to interface the device via SPI from the MCU located on the EVL998 board

Applications

- 12 V vehicle starter and backup batteries

Description

The IC board integrates the L9988 BMS device, a complete solution for monitoring, balancing, and protecting battery packs composed of up to 4 series-connected Li-ion or Li-polymer cells, together with an SPC582B50E1 microcontroller, to provide a full system platform.

The L9988 continuously measures individual cell voltages, the total stack voltage, and temperature via external NTC thermistors with configurable timing.

The IC also features four high-side VGS pre-drivers to control two independent groups of back-to-back MOSFETs used as circuit breakers for safe battery pack connection management.

The L9988 delivers very low power consumption, hot-plug robustness, and comprehensive protection mechanisms for reliable battery management in automotive and industrial applications.

Figure 1. L9988 system board - Top

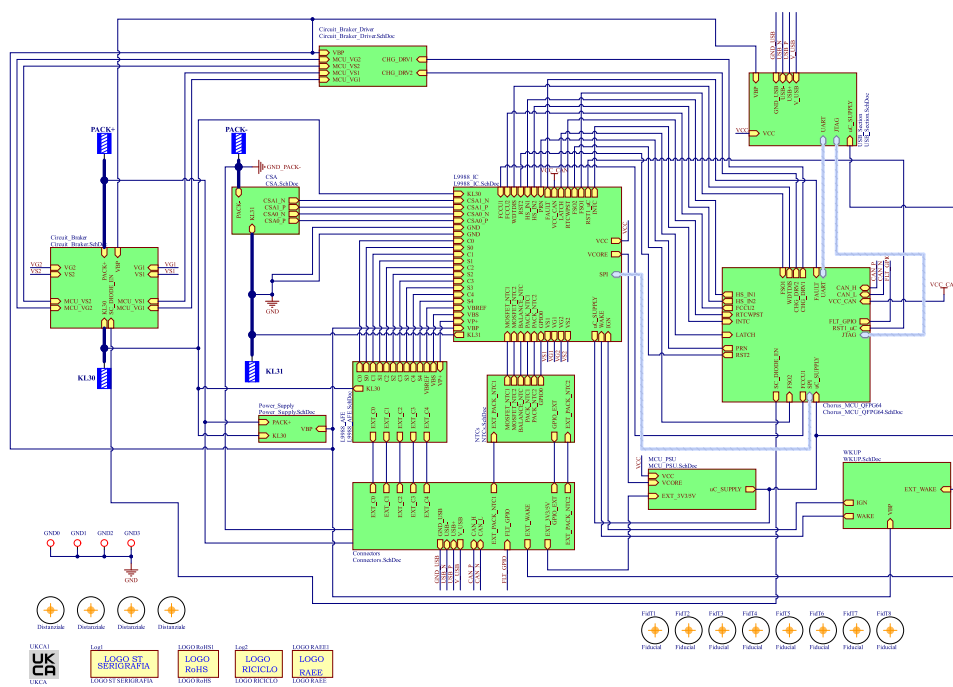


Figure 2. L9988 system board – IC section

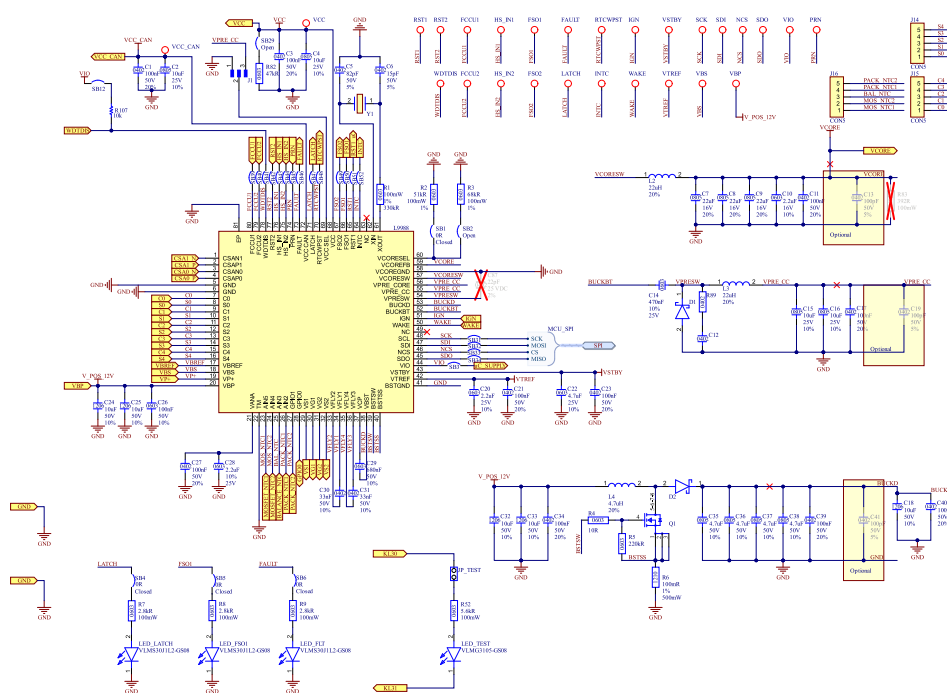


Figure 3. L9988 system board – Power supply section

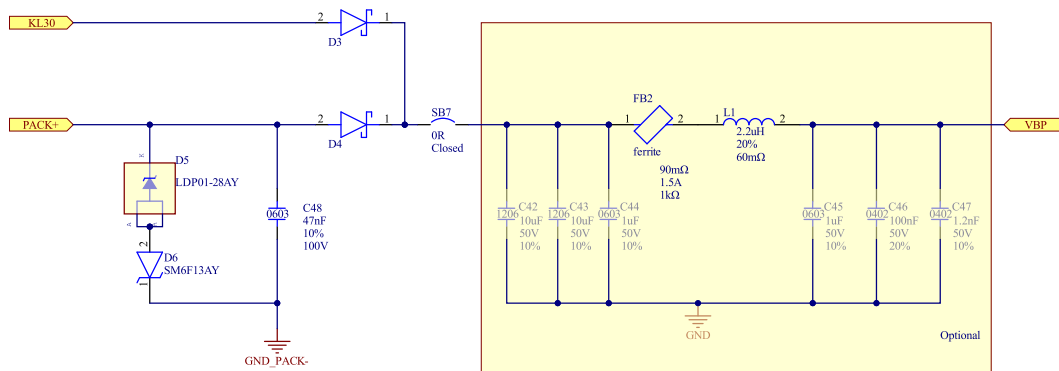


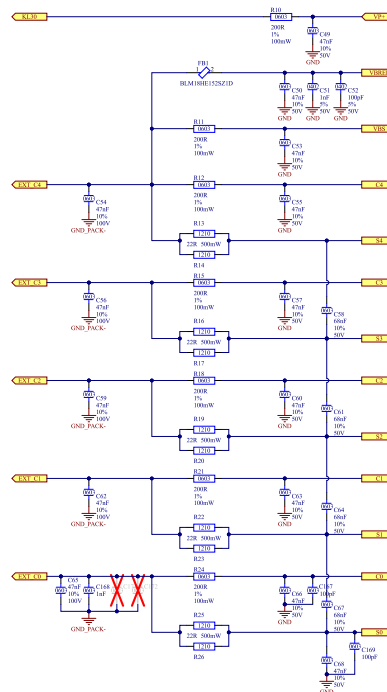
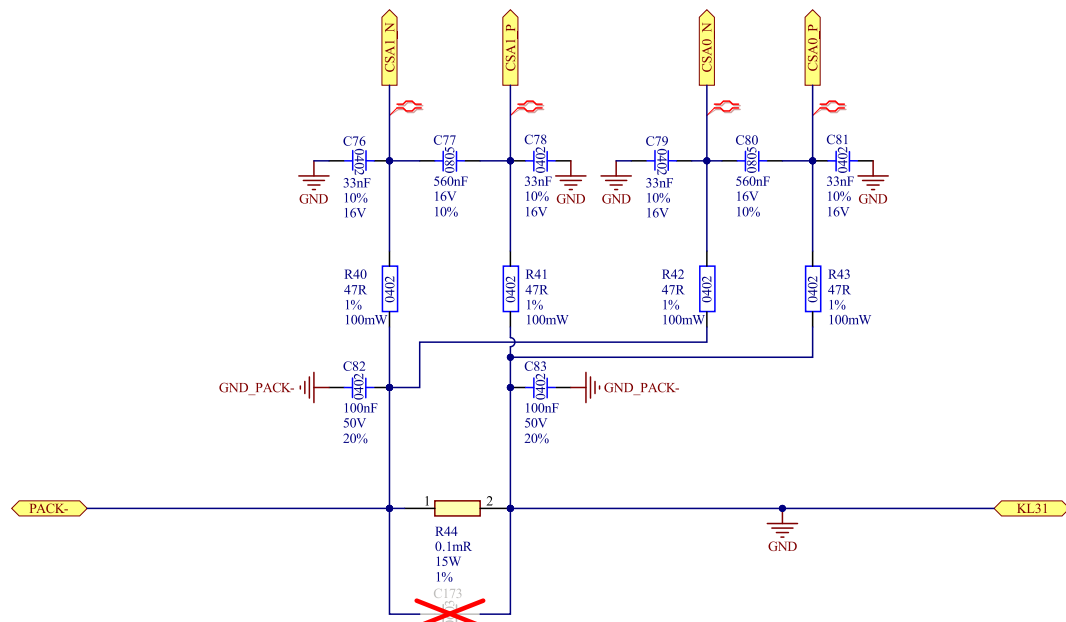
Figure 4. L9988 system board – Cell monitor section

Figure 5. L9988 system board – Current monitor section


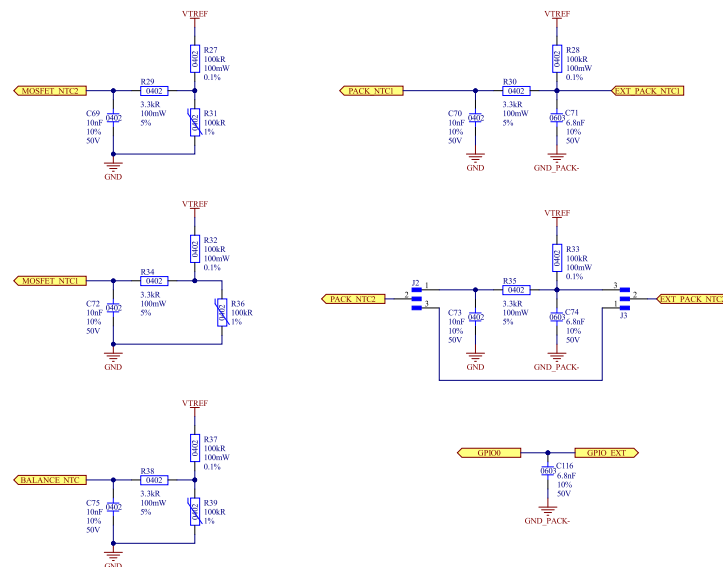
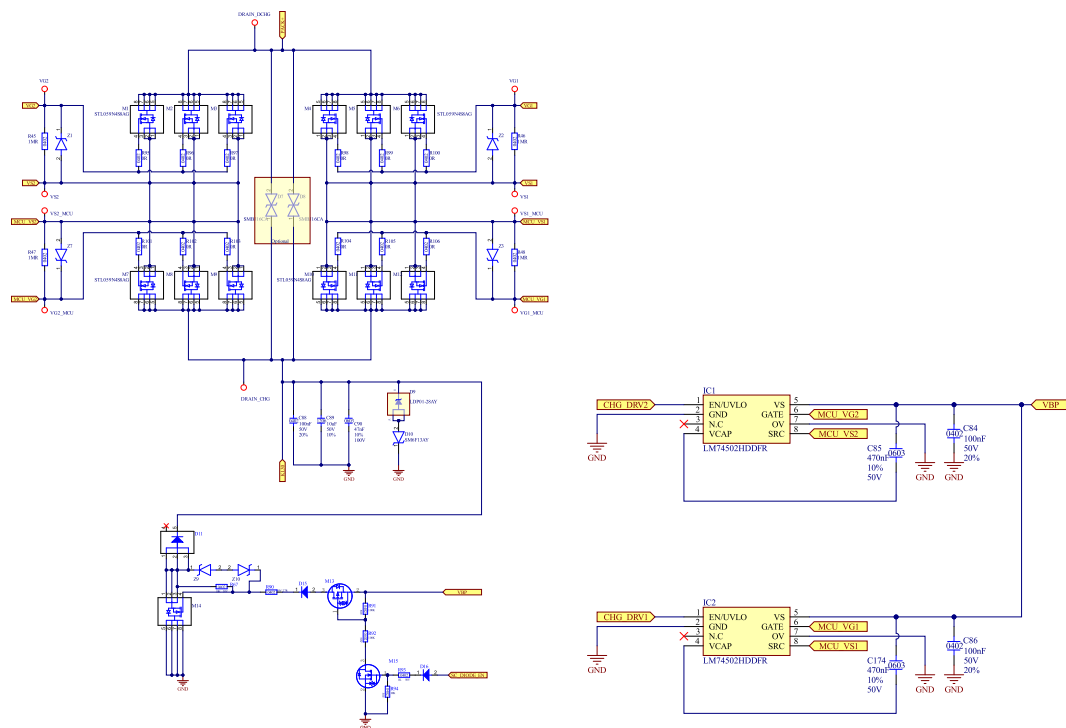
Figure 6. L9988 system board – NTC monitor section

Figure 7. L9988 system board – Circuit breaker section


Figure 8. L9988 system board – Connector section

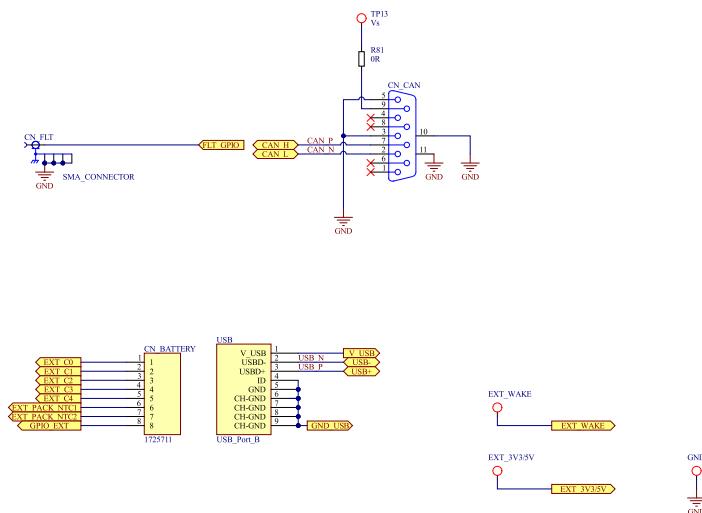
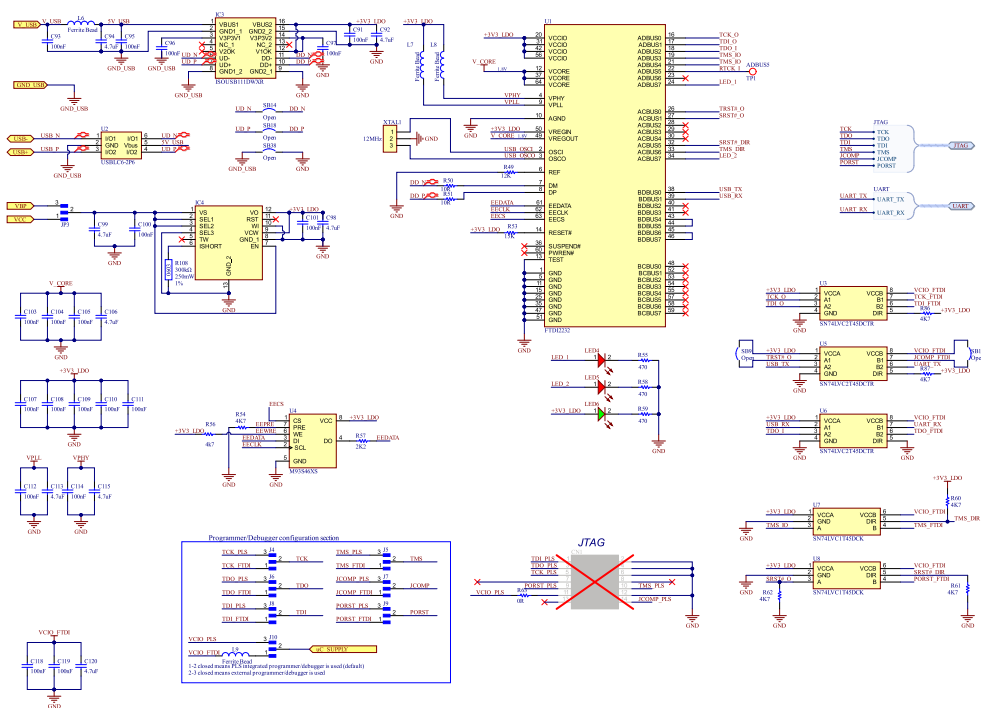
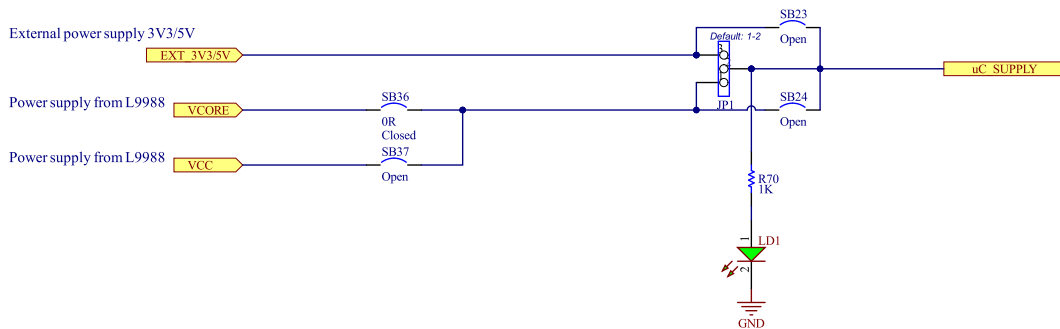


Figure 9. L9988 system board – USB section



[illegible][illegible]

Figure 12. L9988 system board – MCU PSU



2 PCB layout

Figure 13. L9988 top layer

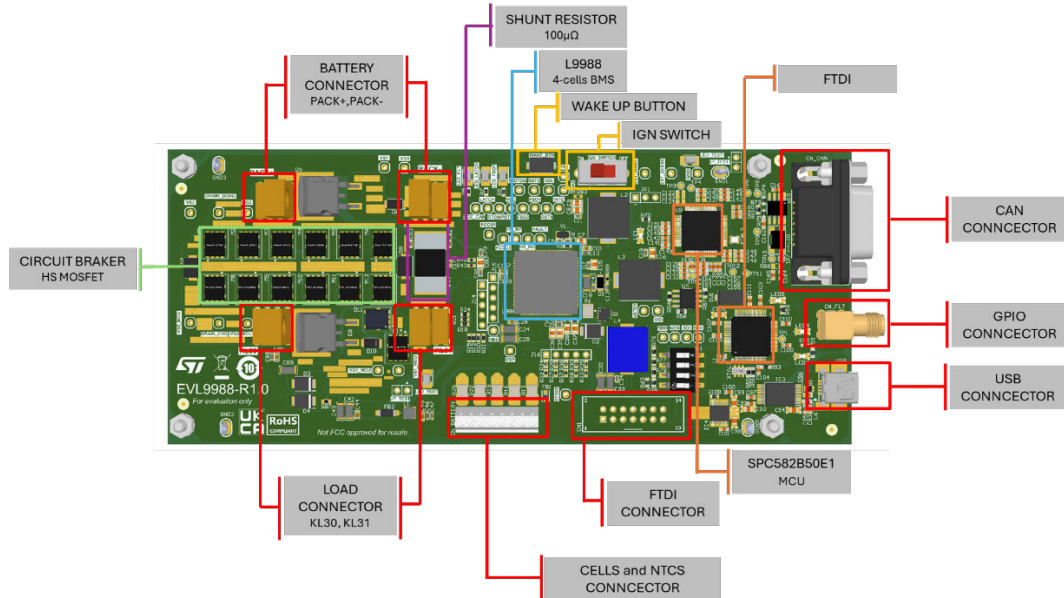
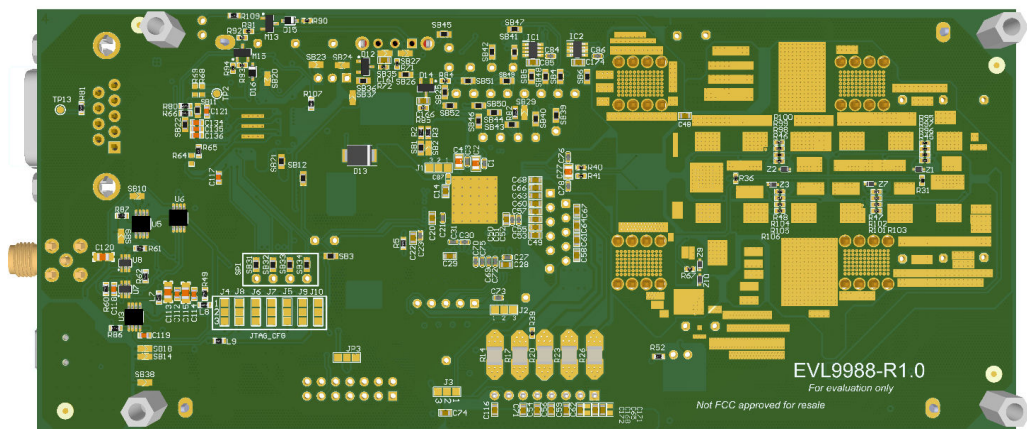


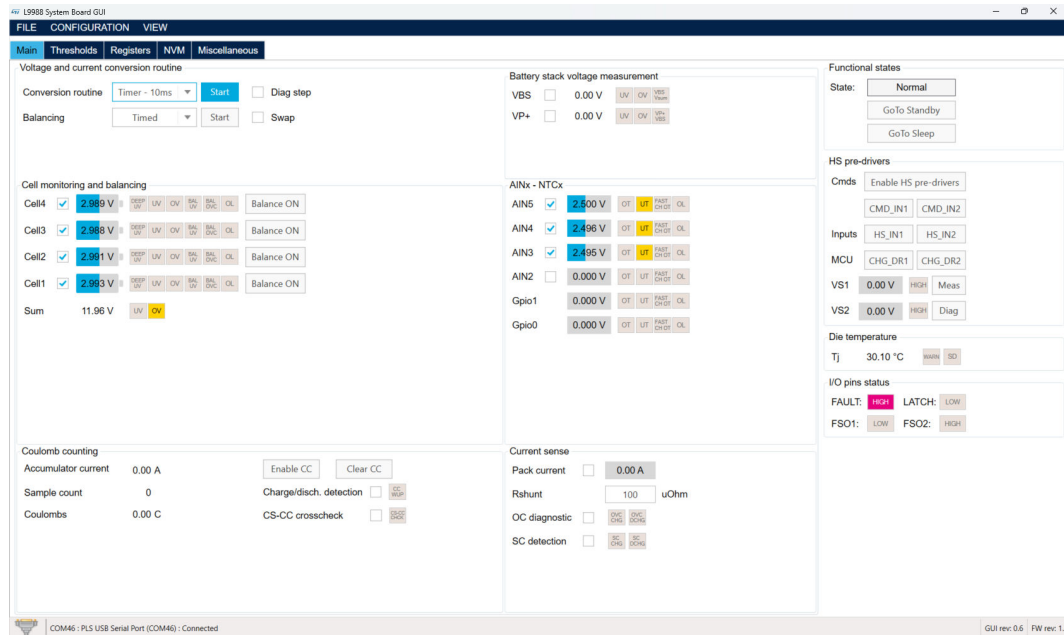
Figure 14. L9988 bottom layer



3 Promotional GUI

L9988 promotional GUI is available for demonstration purposes. For more information and download, please refer to www.st.com web page.

Figure 15. Promotional GUI interface



Revision history

Table 1. Document revision history

Date	Version	Changes
17-Mar-2026	1	Initial release.

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