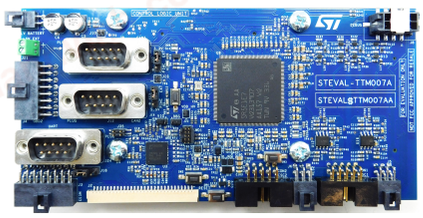
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STEVAL-TTM007A

Data brief

Control board for automotive motor control applications



Product summary	
Control board for automotive motor control applications	STEVAL-TTM007A
Applications	Traction inverters and OBC for powertrain architectures

Features

- New concept of control logic unit based on ASIL D SR5E1E7 MCU with 2x 32-bits Arm Cortex®-M7 in eTQFP176 package and ASIL-D SPSB100 power management IC with integrated watchdog for safety (AEC-Q100 qualified ISO 26262)
- Supported by the StellarStudio MC configurator tool
- Motor control connector with 100 pins to support or different kind of motor control application like the dual motor, the six phase motor, the EESM (externally excited synchronous motor and providing a redundancy in the resolver feedback circuitry conditioning
- A full set of motor position feedback acquisition allows to address and manage all the most advanced F.O. C: algorithms
- 2x CAN-FD and 1x UART communication port
- OBD2 port for vehicle interface
- Full compatibility with different gate driver board for traction inverter up to 350 kW like the STEVAL -03ACB and the STEVAL-05 ACB based on the galvanically isolated gate driver L9502E and the STEVAL-04ACB with the STGAP4S

Description

The STEVAL-TTM007A has been specifically designed for high voltage motor control applications like traction inverter and for ASIL D applications.

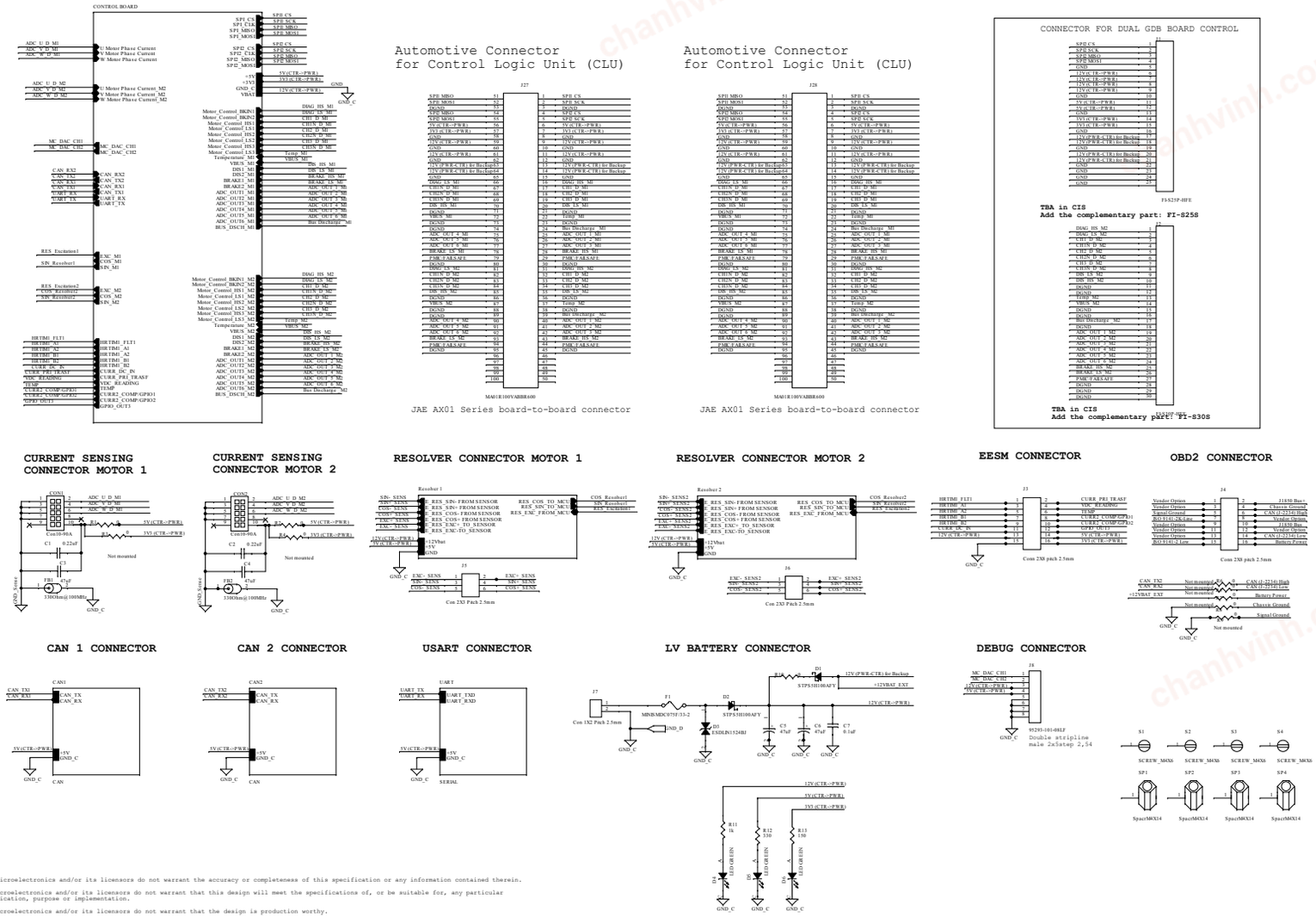
The STEVAL-TTM007A can be supplied by the 12V input (aux battery) or by means of a 5V input by passing the PMIC for the voltage generation.

The STEVAL-TTM007A hosts many connectors offering a huge quantity of external connections for digital outputs/inputs and analog outputs/inputs with optimized filters for signal conditioning

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1 Schematic diagrams

Figure 1. **STEVAL-TTM007A schematic diagram (1 of 10)**



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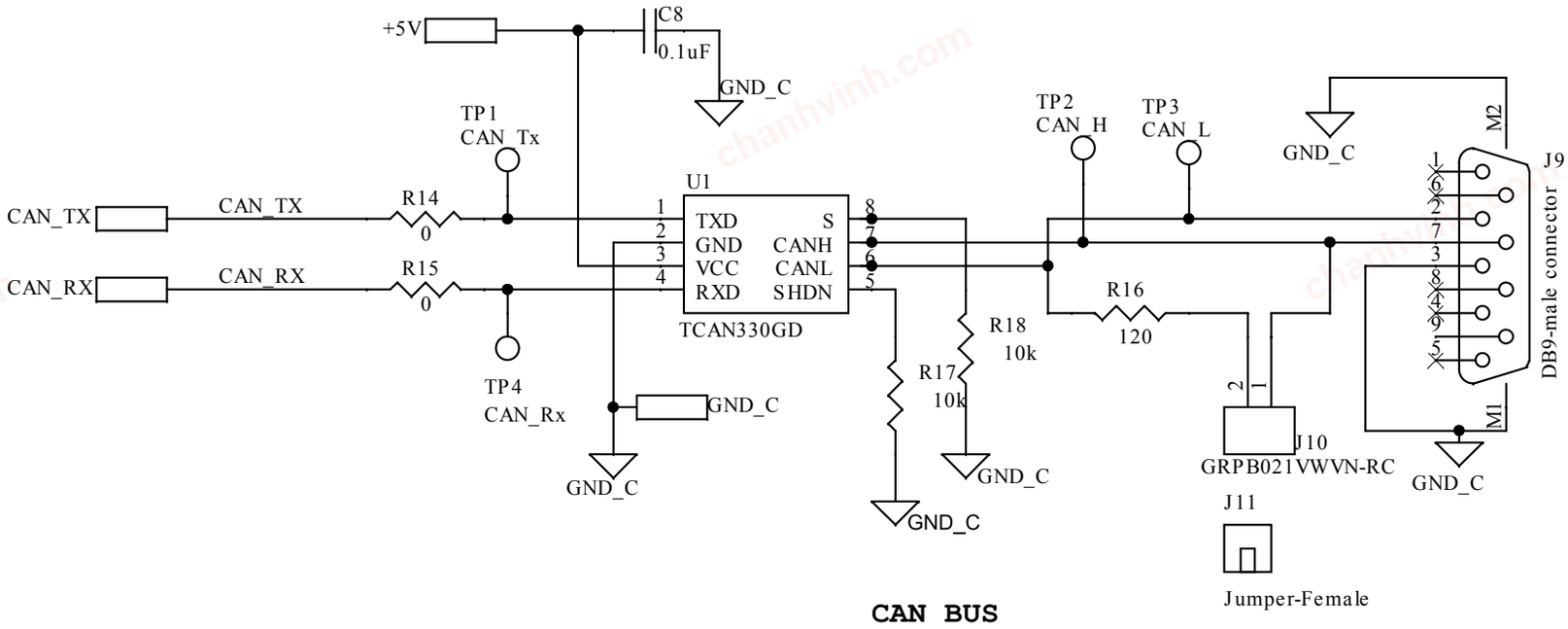
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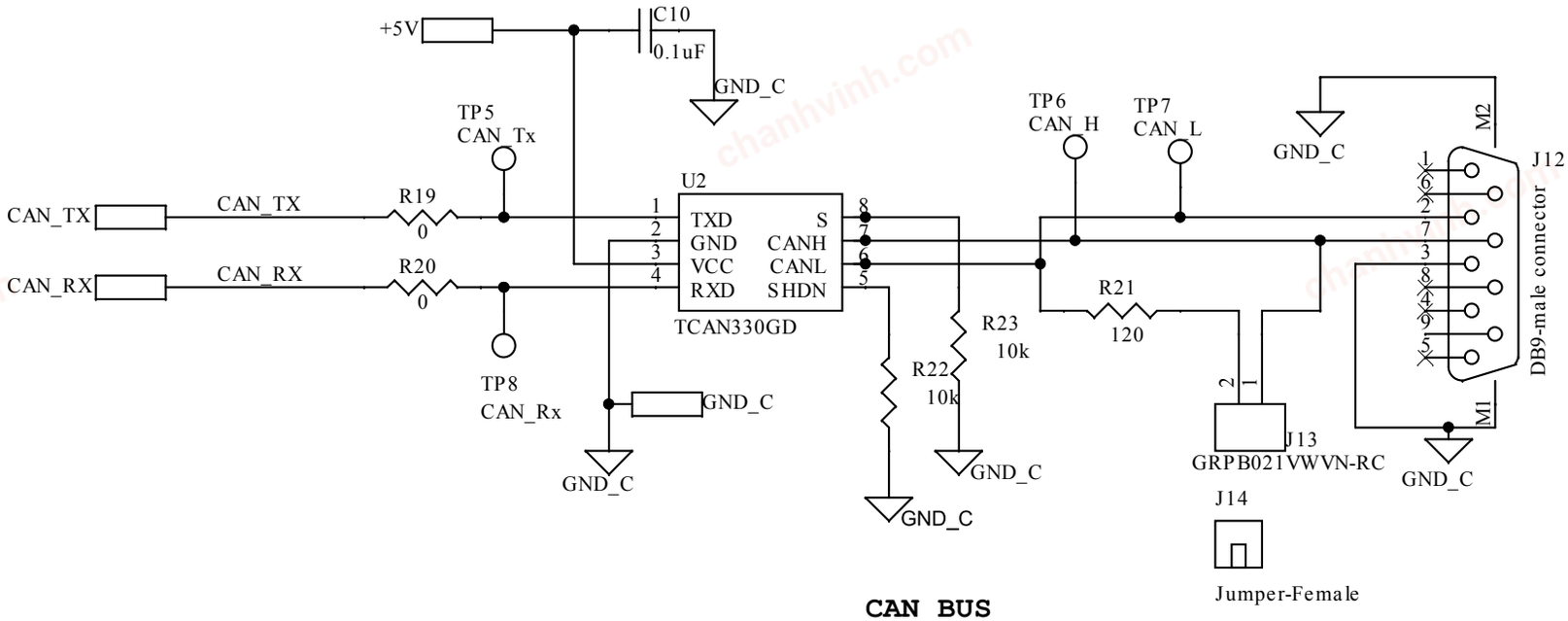
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Figure 2. **STEVAL-TTM007A schematic diagram (2 of 10)**



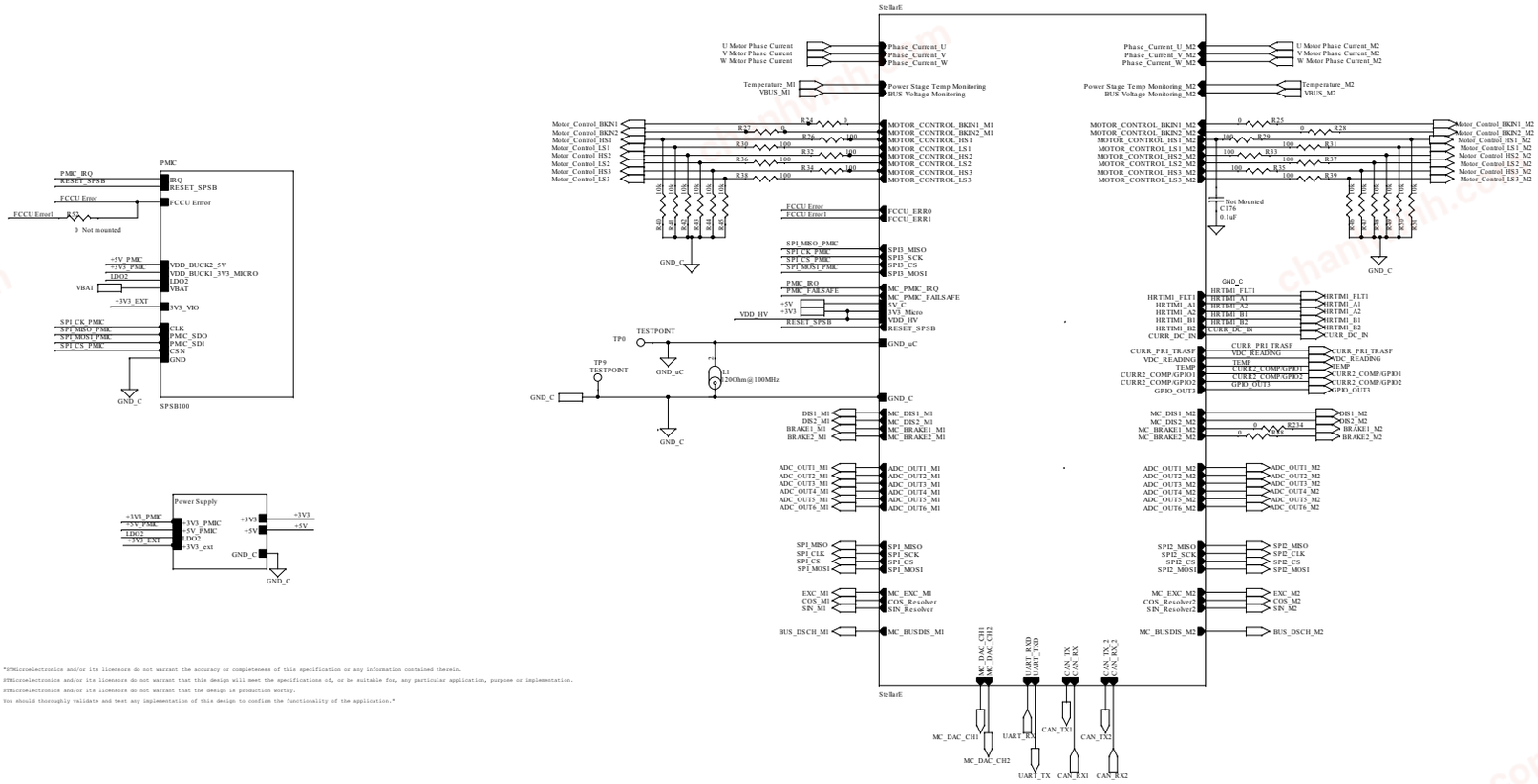
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Figure 3. **STEVAL-TTM007A schematic diagram (3 of 10)**



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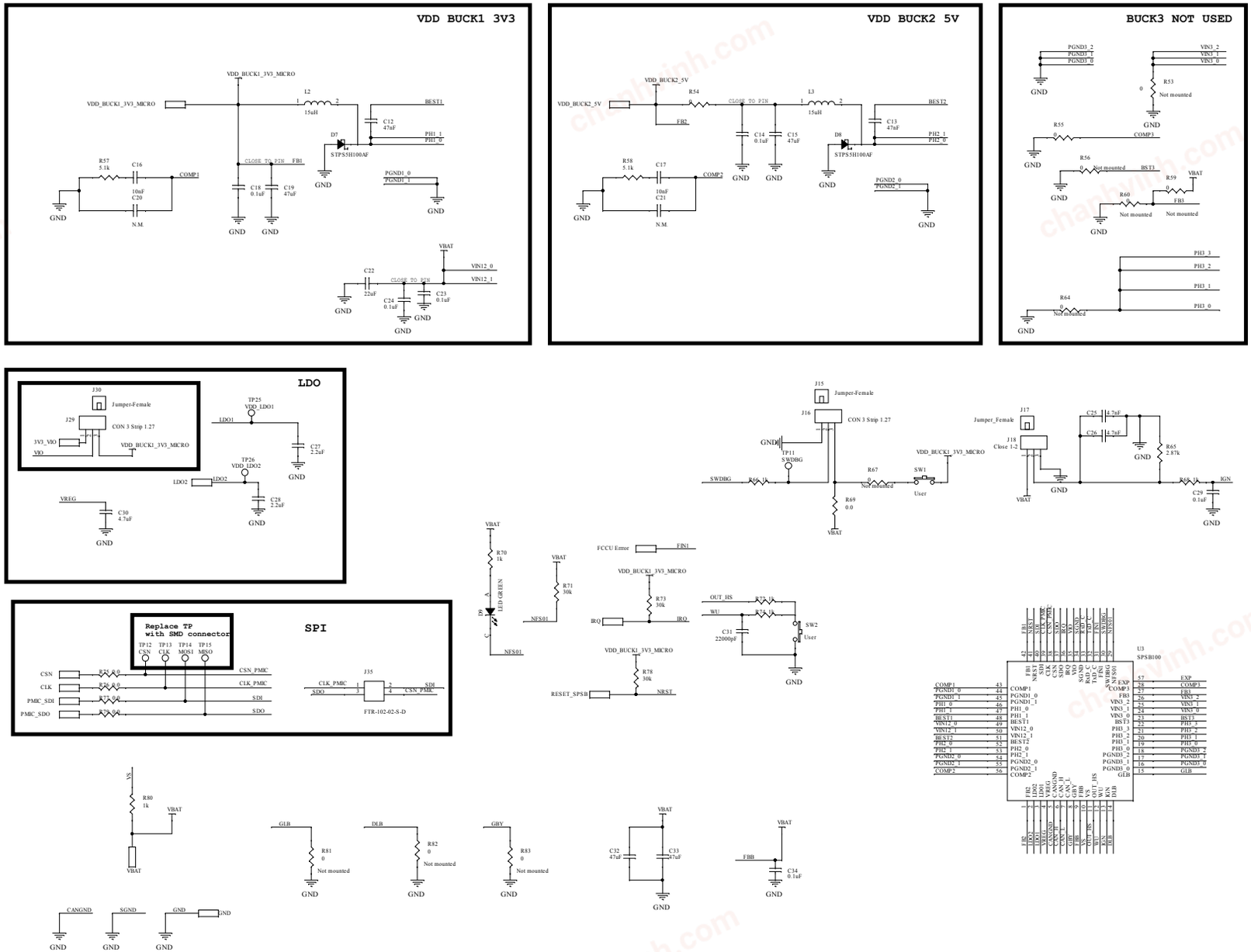
Figure 4. STEVAL-TTM007A schematic diagram (4 of 10)



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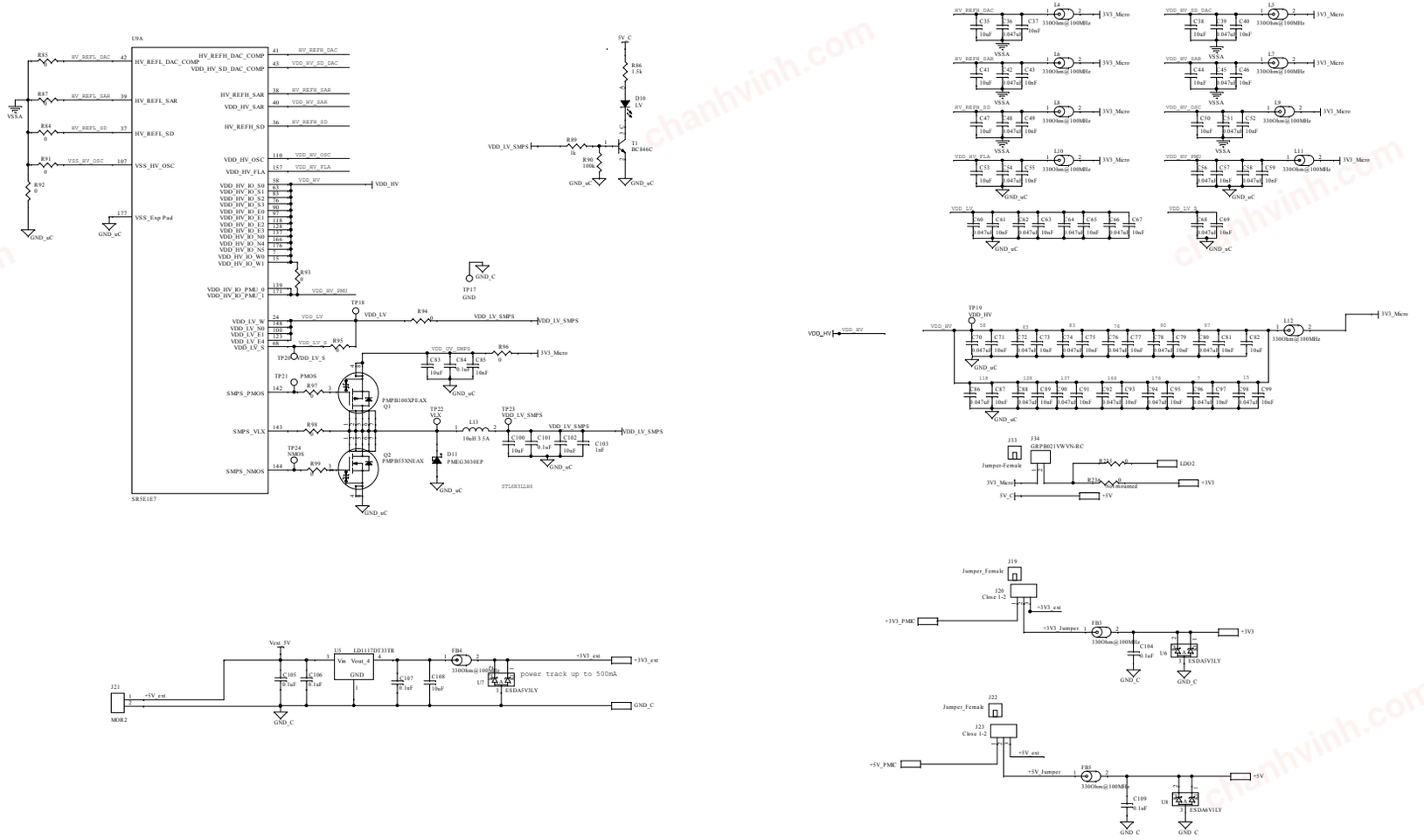
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Figure 5. STEVAL-TTM007A schematic diagram (5 of 10)



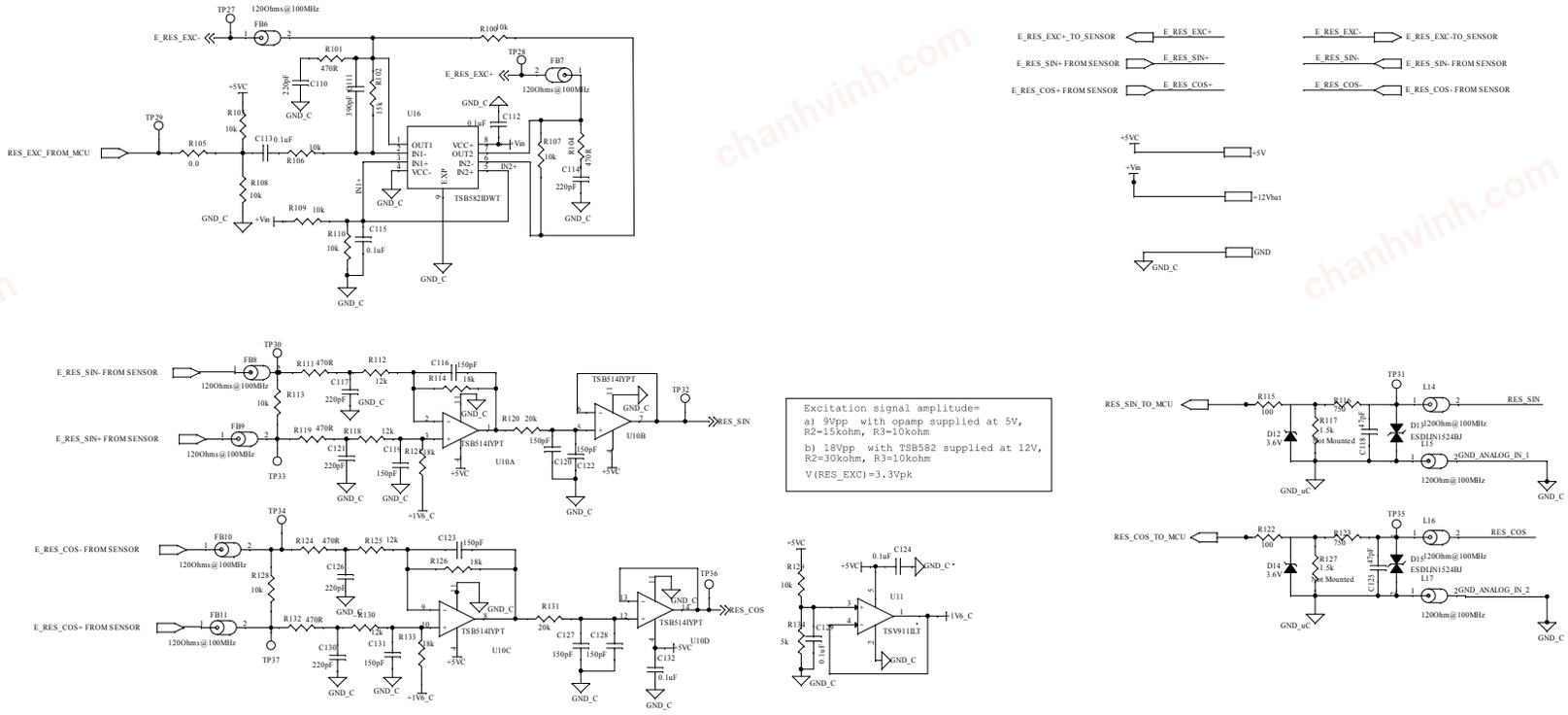
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Figure 6. STEVAL-TTM007A schematic diagram (6 of 10)



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Figure 7. STEVAL-TTM007A schematic diagram (7 of 10)



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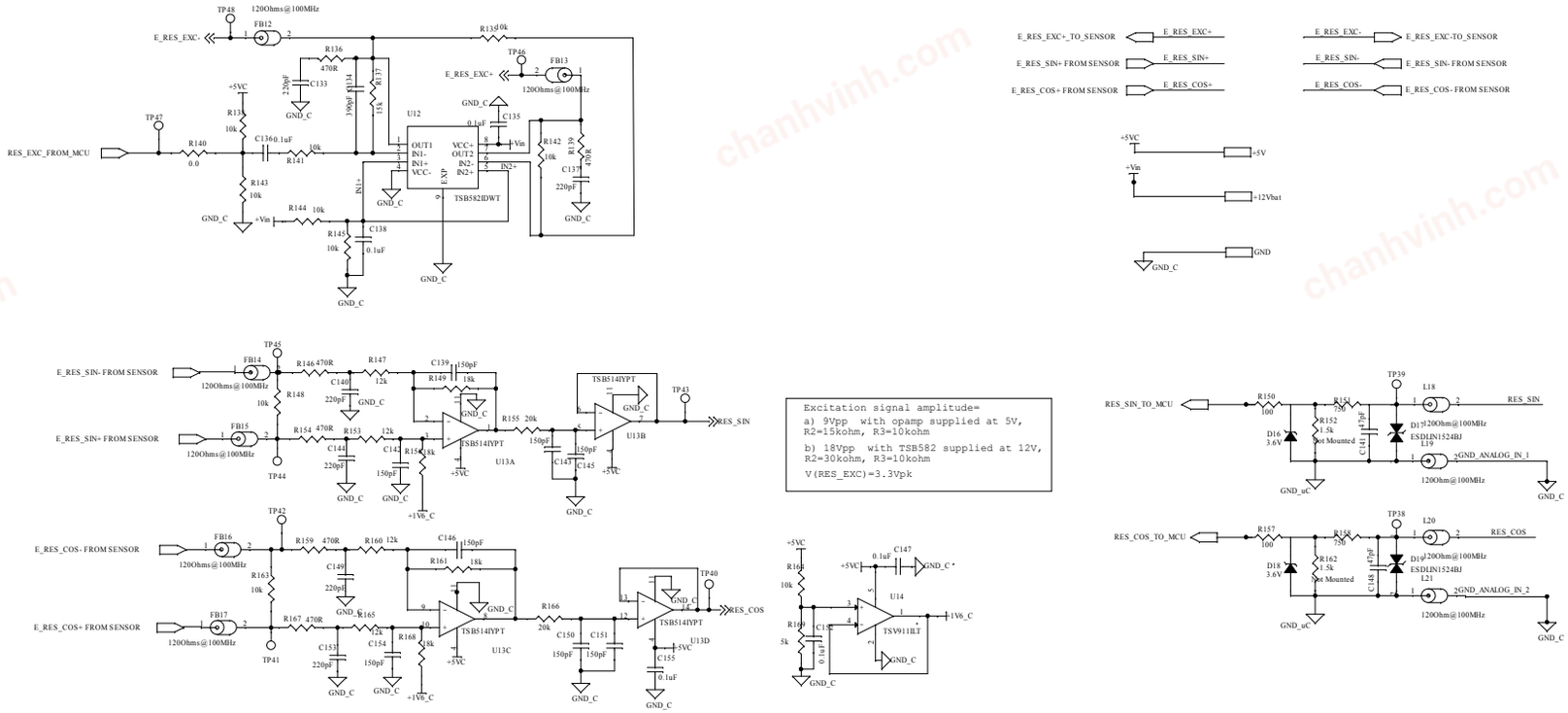
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Figure 8. STEVAL-TTM007A schematic diagram (8 of 10)



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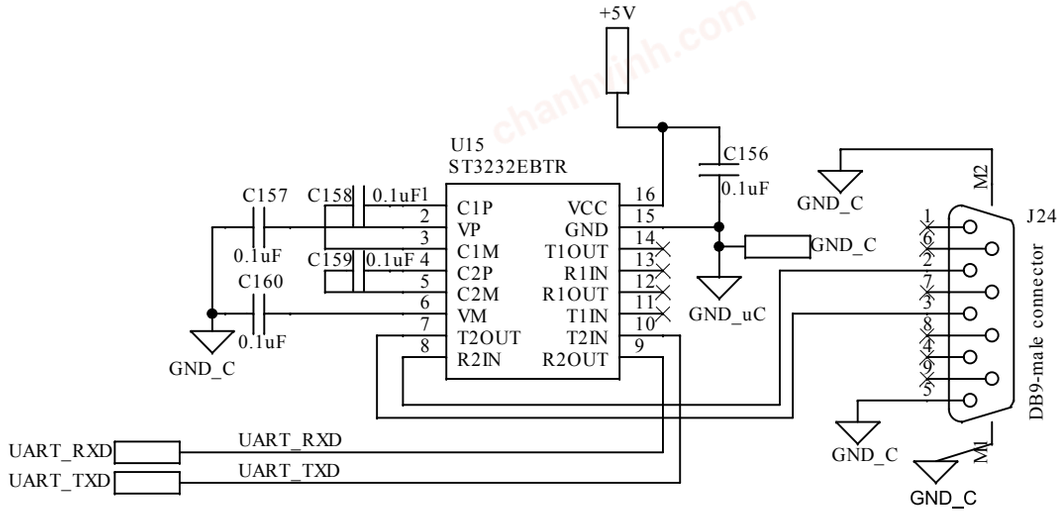
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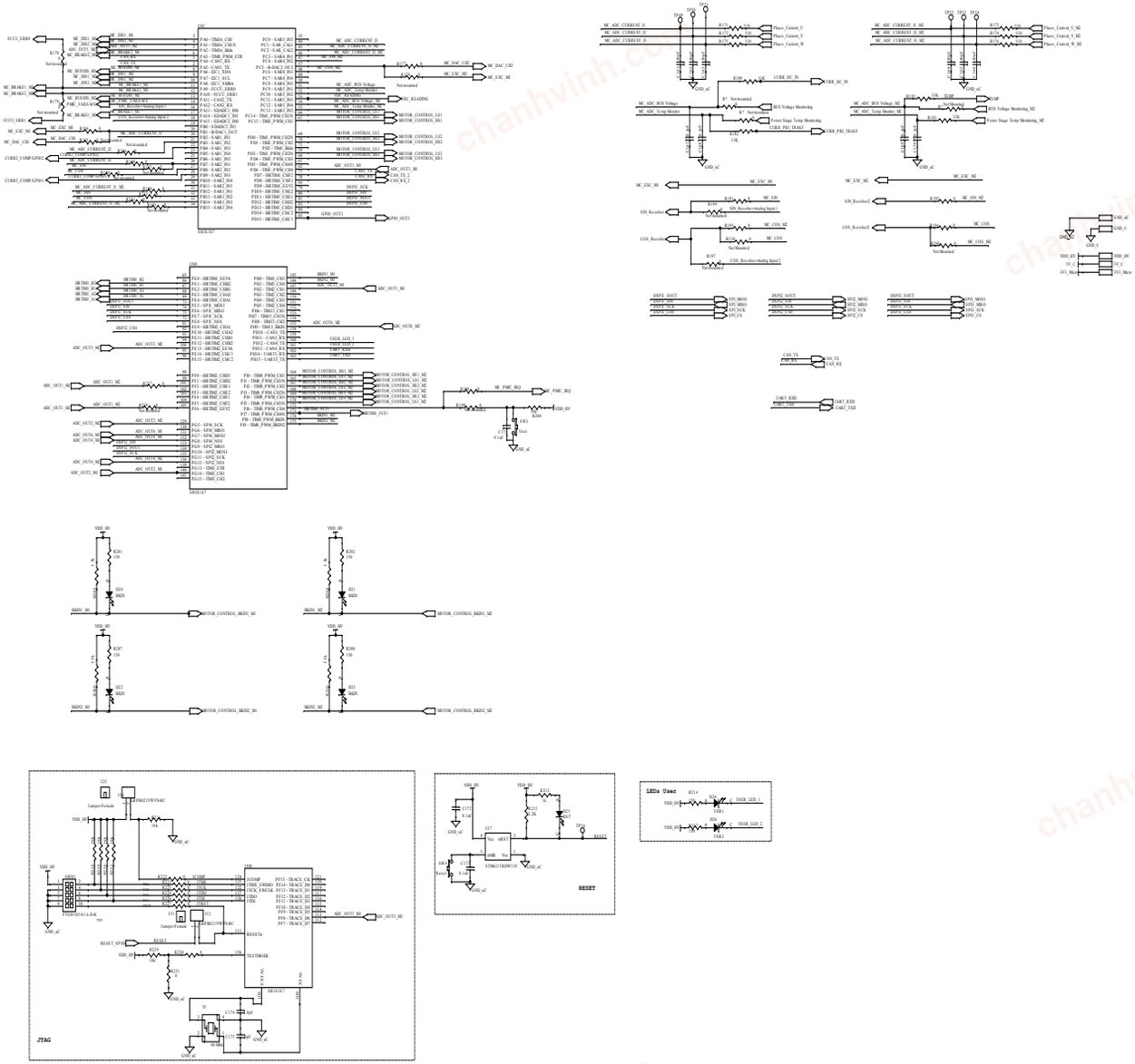
Figure 9. **STEVAL-TTM007A schematic diagram (9 of 10)**



UART - RS 232

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Figure 10. STEVAL-TTM007A schematic diagram (10 of 10)



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2 Board versions

Table 1. **STEVAL-TTM007A versions**

Finished good	Schematic diagrams	Bill of materials
STEVAL$TTM007AA (1)	STEVAL$TTM007AA schematic diagrams	STEVAL$TTM007AA bill of materials

1. *This code identifies the STEVAL-TTM007A evaluation board first version.*

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Revision history

Table 2. **Document revision history**

Date	Version	Changes
17-Sep-2024	1	Initial release.

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