



Dual motor drive control stage based on the STM32F415ZG microcontroller

Data brief

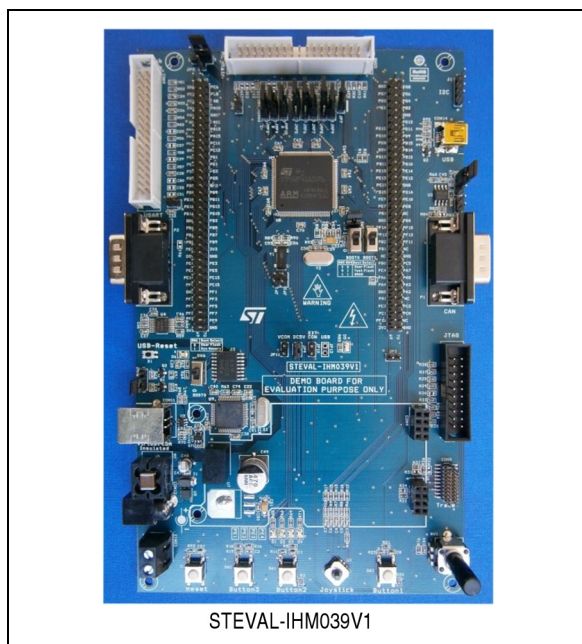
Features

- Two fully featured MC connectors for interfacing with any of the possible STMicroelectronics's evaluation power boards
- JTAG, SWD and trace debug support
- Mini-USB connector for isolated virtual COM port
- USB 2.0 full speed connection
- 240 x 320 TFT color LCD
- Joystick with 4 LEDs and 4-direction control and selector
- Reset plus three user buttons
- Five 5 V power supply sources: 2-way screw connector, power jack,
- 2 USB connectors (one isolated)
- Boot from user Flash or system memory
- CAN 2.0 A/B compliant connection
- I²C connection
- RS-232 channel with RTS/CTS handshake support
- Extension connectors for daughterboard or wrapping area board
- RoHS compliant

Description

The STEVAL-IHM039V1 demonstration board is a control stage based on STMicroelectronics's ARM™ Cortex™-M4 core-based STM32F415ZGT6 microcontroller featuring single and dual motor control.

It can be used together with the STM32 PMSM single/dual FOC SDK v3.2 and two of the possible STMicroelectronics's evaluation power boards provided with MC connectors for a complete dual



motor control evaluation and development platform.

With dedicated hardware features, the STEVAL-IHM039V1 demonstration board is designed to help developers to evaluate ST devices and to develop their own applications.

1 Schematic diagram

Figure 1. Extension & I2C_IOS Connectors

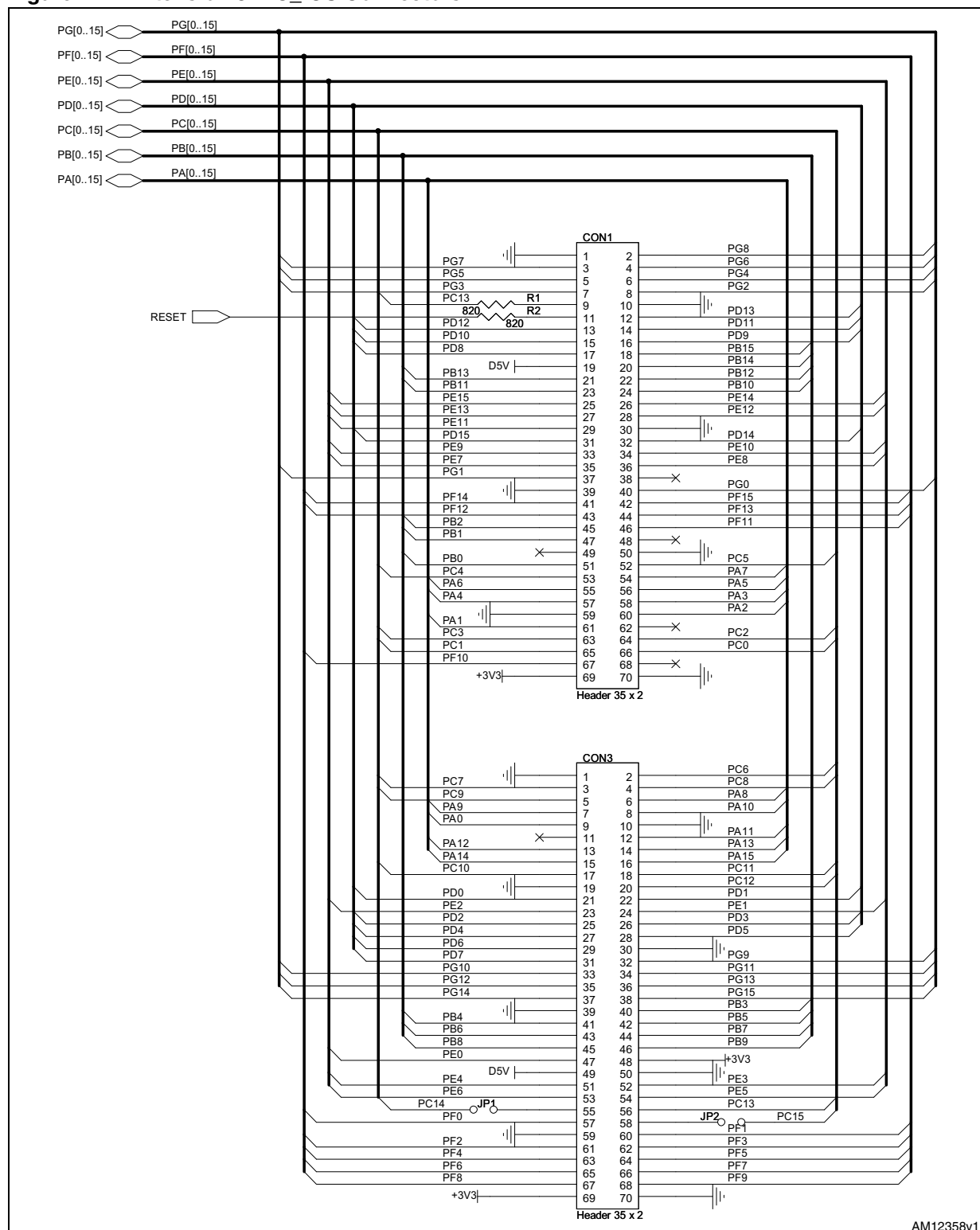
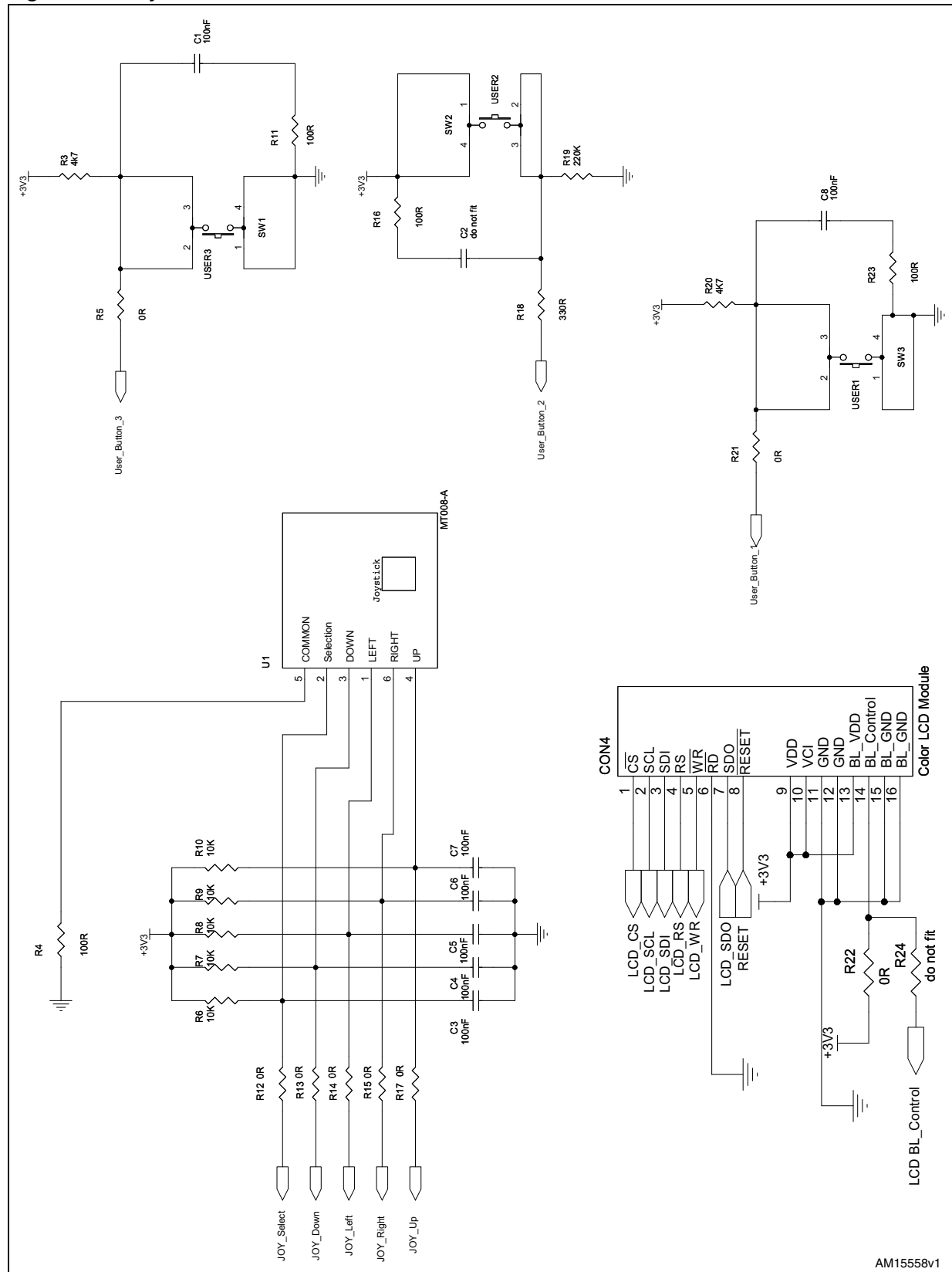


Figure 2. Joystick button and LCD



AM15558v1

Figure 3. JTAG SWD and trace

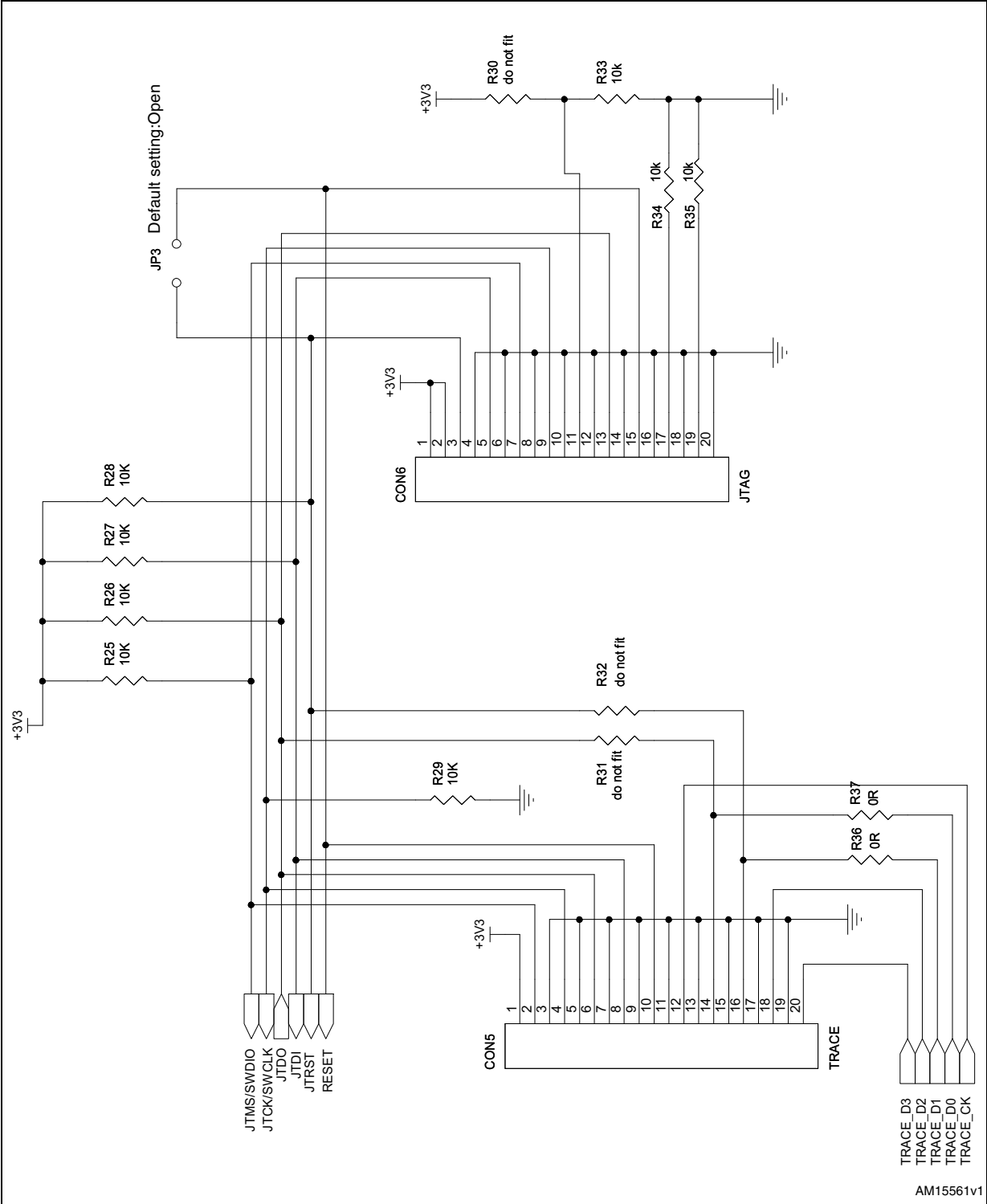
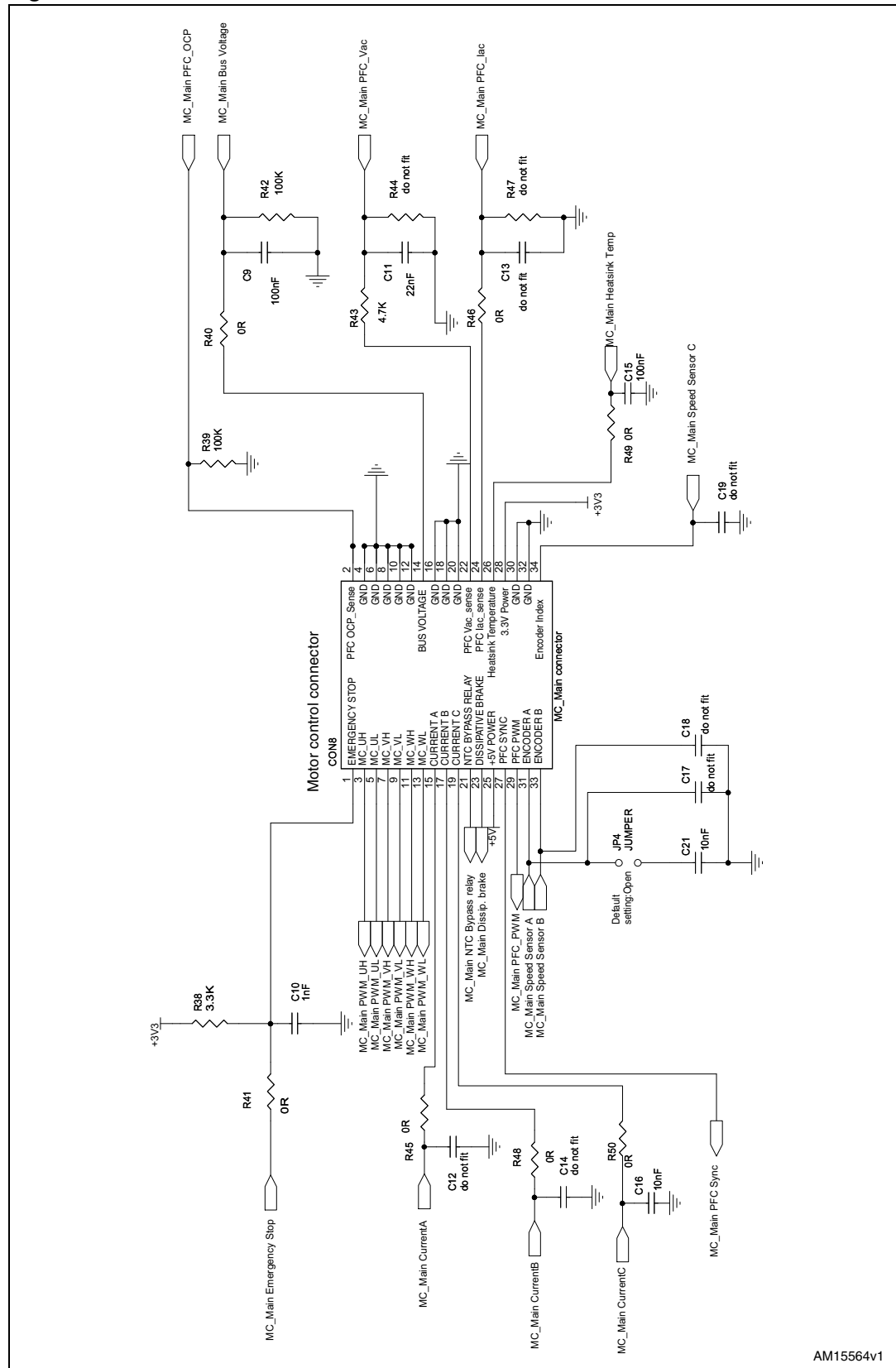
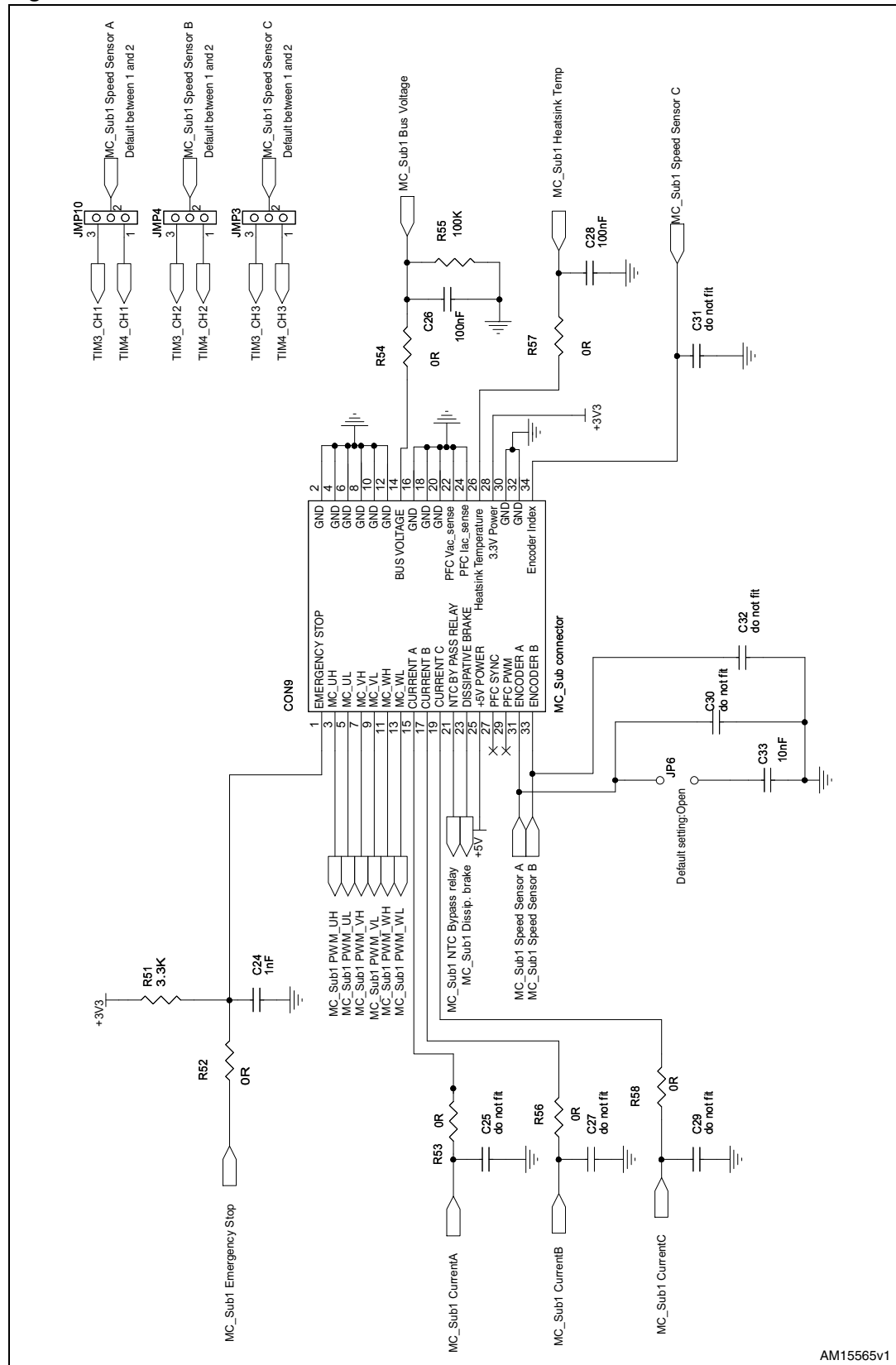


Figure 4. MC connector MAI



AM15564v1

Figure 5. MC connector SUB1



AM15565v1

Figure 6. Peripheral (1 of 2)

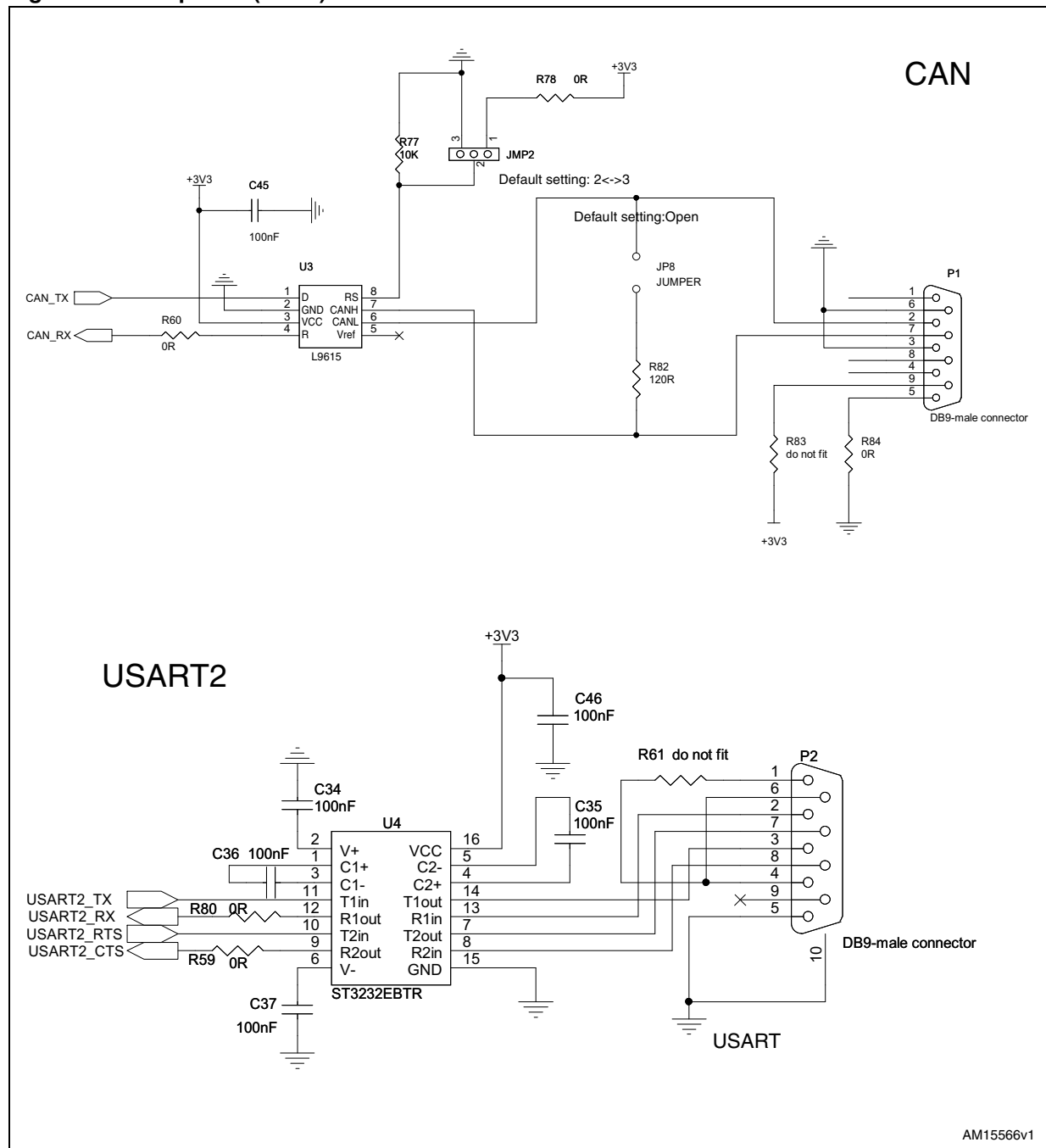


Figure 7. Peripheral (2 of 2)

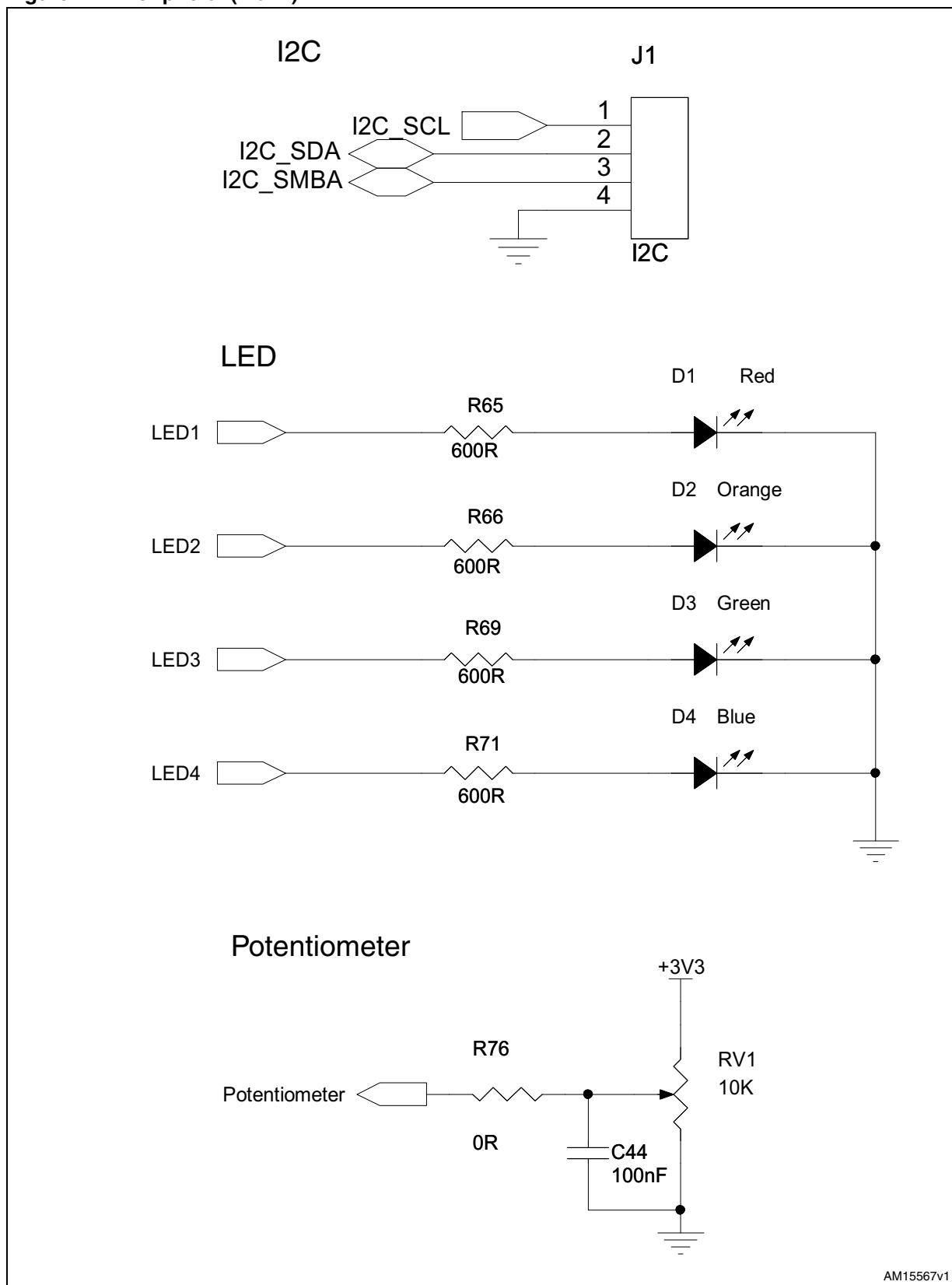


Figure 8. Power (1 of 2)

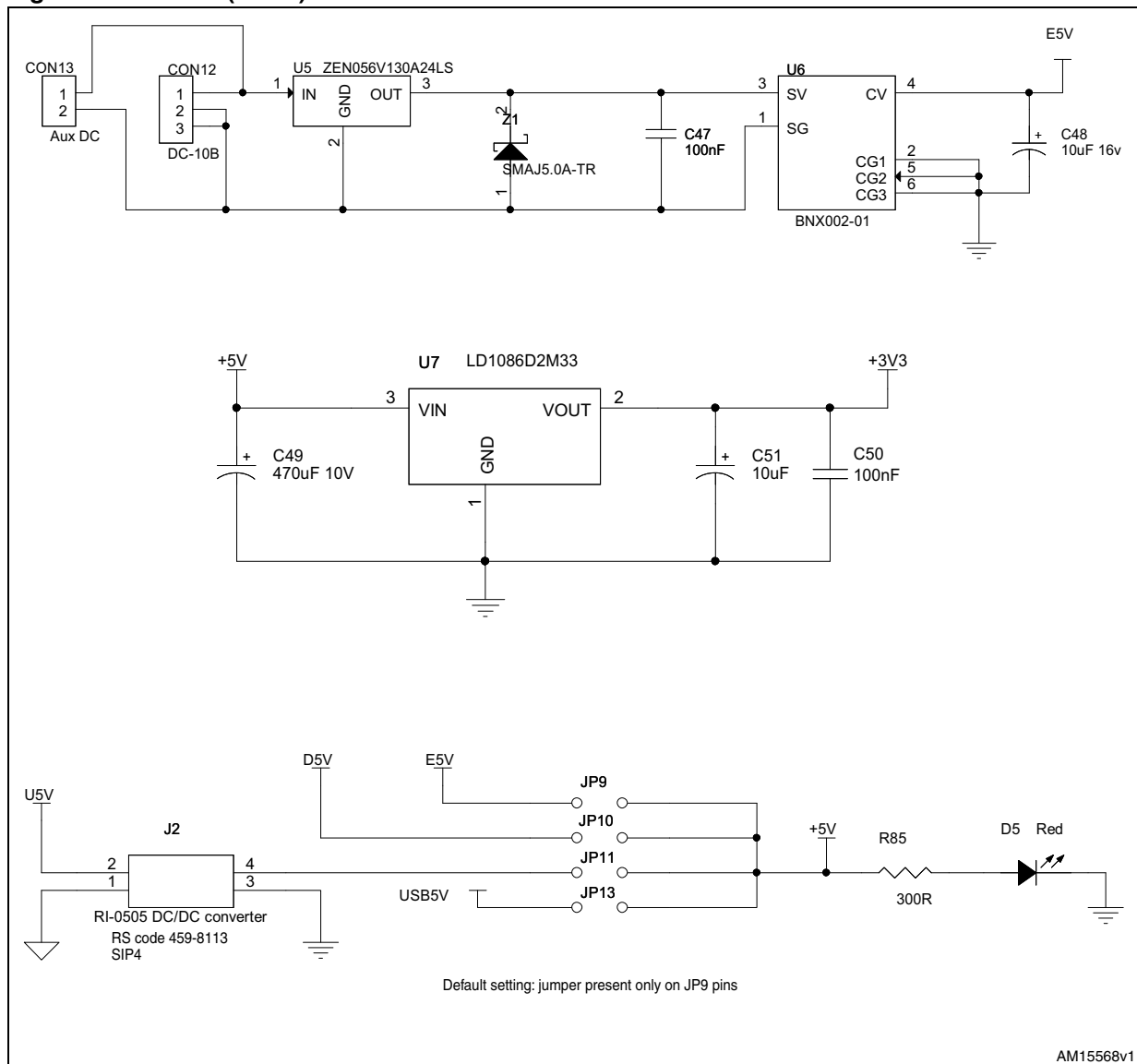
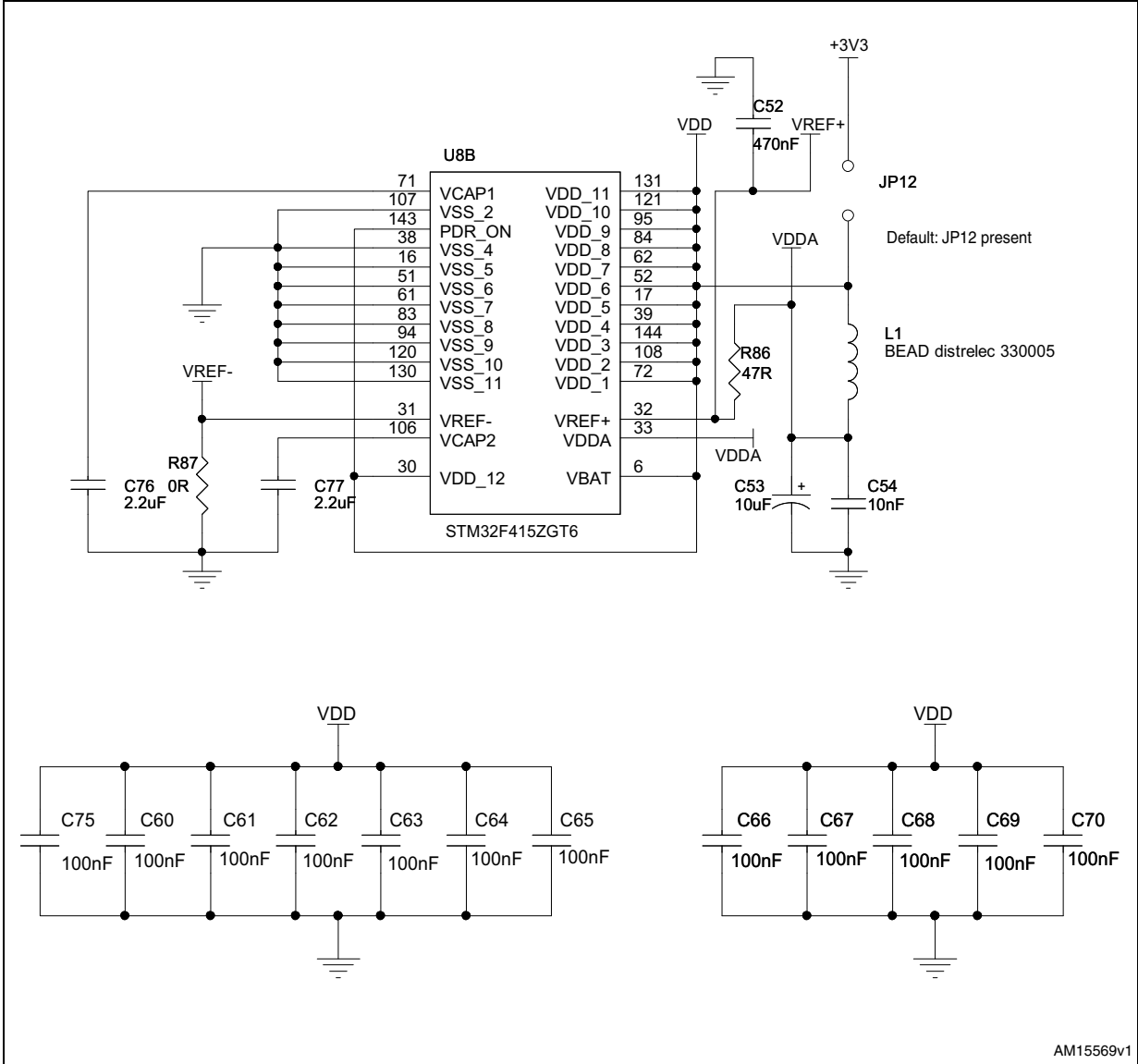


Figure 9. Power (2 of 2)



AM15570v1

The schematic diagram illustrates the internal circuitry of the AM15571v1 module. The central component is the STM32F103R8T6 microcontroller (U9), which is configured for USB-to-UART communication. The USB interface is managed by the USB Reset circuit (B1) and the USB-to-5V converter (U2). The UART interface is handled by the USB-to-serial converter (U1) and the USB-to-UART bridge (U3). The module also includes a USB-to-UART bridge (U4) and a USB-to-UART bridge (U5). The power management section includes a 5V regulator (U5) and a 10V input. The communication section includes a USB-to-serial converter (U1) and a USB-to-UART bridge (U3). The module also features a USB connector (J4), a USB connector (J5), and a USB connector (J6).

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
16-Jan-2013	1	Initial release.

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY TWO AUTHORIZED ST REPRESENTATIVES, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER'S OWN RISK.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2013 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru

www.lifeelectronics.ru