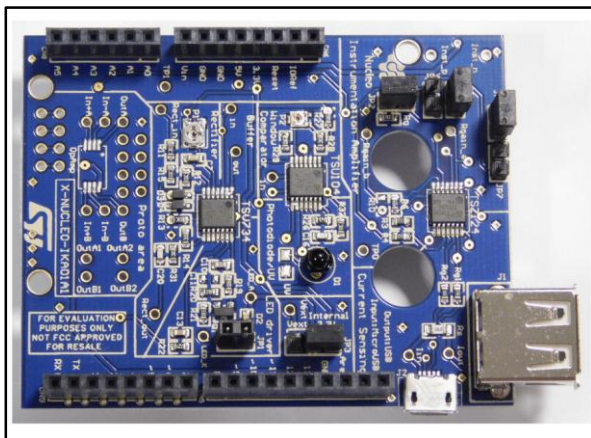


Multifunctional expansion board based on operational amplifiers for STM32 Nucleo

Data brief



Description

The X-NUCLEO-IKA01A1 is a multifunctional expansion board based on STMicroelectronics operational amplifiers. It provides an affordable and easy-to-use solution for various use cases with your STM32 Nucleo board. The X-NUCLEO-IKA01A1 is compatible with the Arduino™ UNO R3 connector, and supports the addition of other boards that can be stacked for enhanced applications with an STM32 Nucleo board. It can be used as an analog front-end by conditioning signals as actuator to drive LEDs or coils, or in a comparator architecture.

Thanks to its current-sensing configuration, it allows current measurement of any device that has a Micro-USB port. A highly accurate TSZ124 Micropower operational amplifier is used for this configuration as well as for that of the instrumentation amplifier. The expansion board also contains a TSU104 Nanopower op-amp and a TSV734 Micropower op-amp for mobile applications.

Features

- 7 predefined configurations:
 - Instrumentation amplifier structure
 - Current sensing with or without USB
 - Photodiode/ultraviolet (UV) current sensing
 - Buffer
 - Full wave rectifier
 - Constant current LED driver
 - Window comparator
- One prototyping area
- Compatible with STM32 Nucleo boards
- Comprehensive free development firmware library (X-CUBE-ANALOG1)
- Powered through the Arduino UNO connectors
- RoHS compliant



1 Schematic diagrams

Figure 1: X-NUCLEO-IKA01A1 circuit schematic (1 of 2)

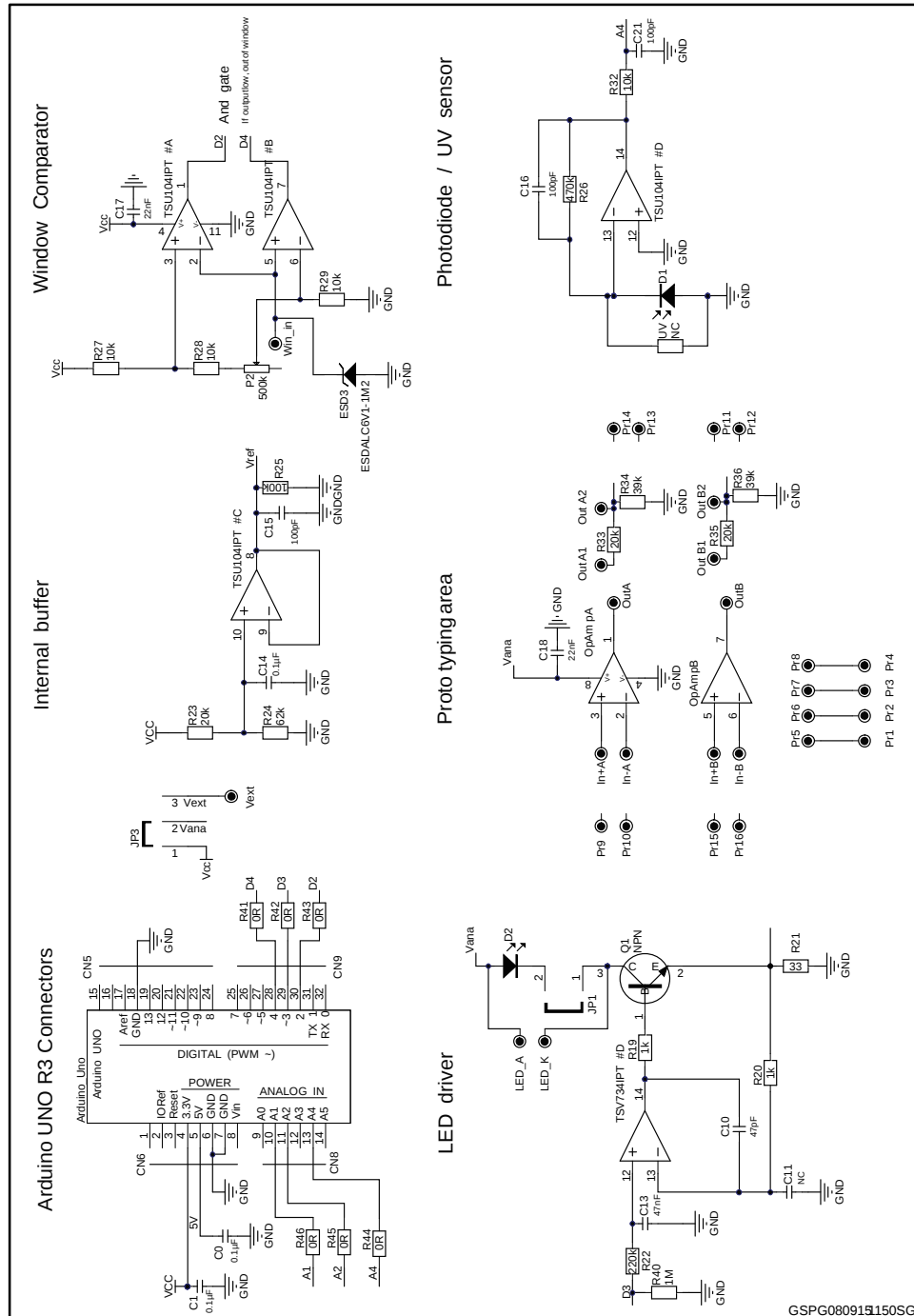
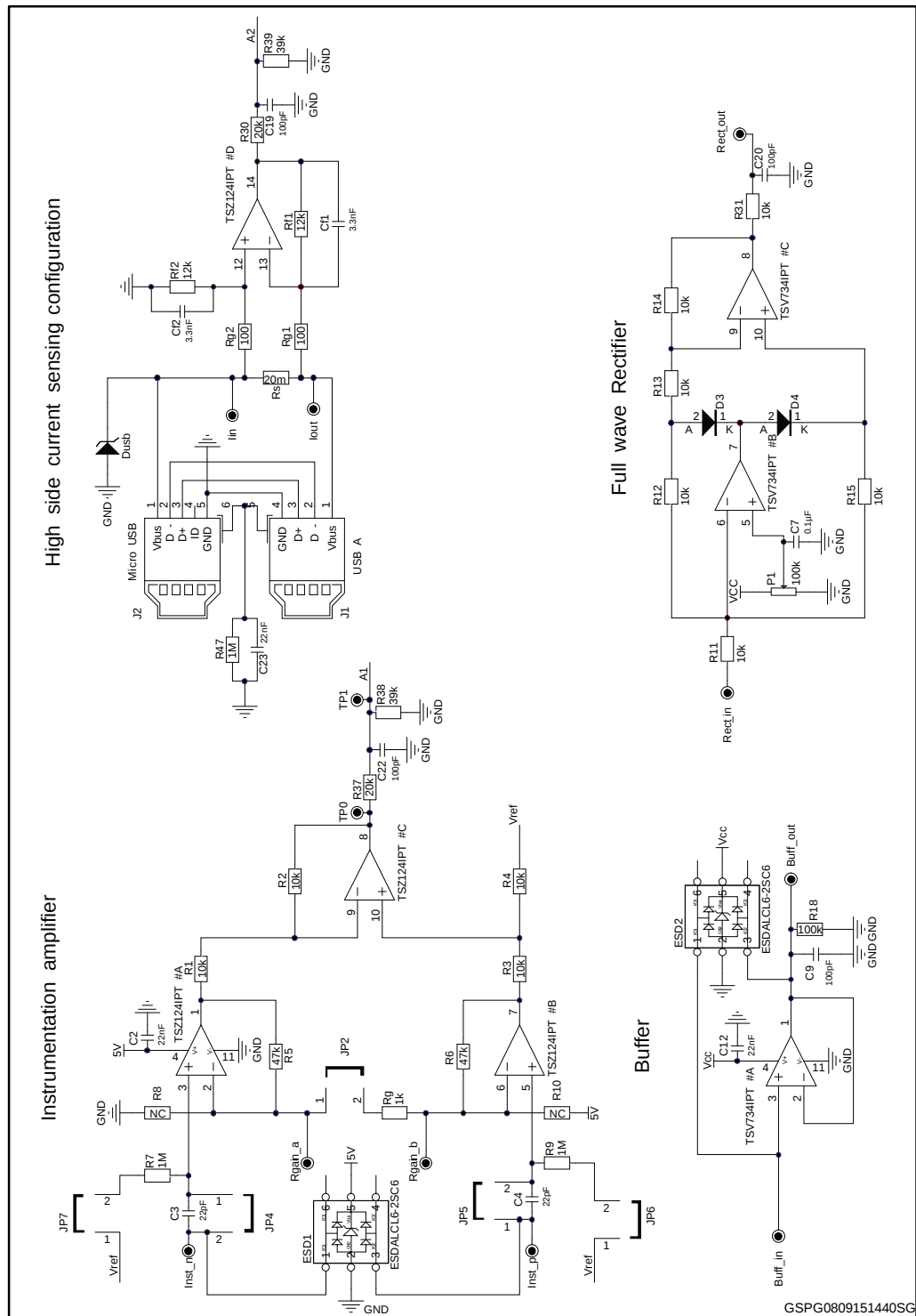


Figure 2: X-NUCLEO-IKA01A1 circuit schematic (2 of 2)



2 Revision history

Table 1: Document revision history

Date	Version	Changes
01-Oct-2015	1	Initial release.

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2015 STMicroelectronics – All rights reserved