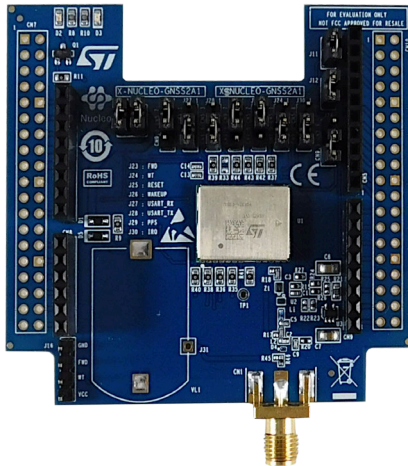


Dead-reckoning GNSS expansion board based on Teseo-VIC3DA for STM32 Nucleo



Features

- Operating supply voltage: 3.3 V
- Ambient temperature: -40/+85°C
- Sensitivity: -163 dBm (tracking mode)
- Interfaces:
 - a UART port
 - an I²C port
 - configurable digital I/O time pulse
 - EXTINT input for wake-up
- NMEA protocol
- Assisted GNSS:
 - autonomous AGNSS
 - real-time, server-based
- Simultaneous multiconstellation:
 - GPS
 - Galileo
 - Glonass
 - BeiDou
 - QZSS
- Compatible with STM32 Nucleo development boards
- Compatible with the Arduino UNO R3 connector
- Teseo-VIC3DA dead-reckoning automotive firmware
- Provision of FWD and WHEELTICK signals
- Automotive GNSS and 6-axis inertial sensor
- LNA and SAW filters on the RF path
- SMA female antenna connector
- RoHS and WEEE compliant

Product summary	
Dead-reckoning GNSS expansion board based on Teseo-VIC3DA for STM32 Nucleo	X-NUCLEO-GNSS2A1
Automotive GNSS dead-reckoning module with 6-axis IMU	TESEO-VIC3DATR
Global navigation satellite system software expansion for STM32Cube	X-CUBE-GNSS1

Description

The X-NUCLEO-GNSS2A1 expansion board is based on the Teseo-VIC3DA tiny GNSS module. It represents an affordable, easy-to-use, global navigation satellite system (GNSS) module, which embeds a TeseoIII single die standalone positioning receiver IC, usable in different configurations in your STM32 Nucleo project.

The Teseo-VIC3DA is a compact (16.0 x 12.2 mm) module that provides superior accuracy thanks to the on-board temperature compensated crystal oscillator (TCXO) and a reduced time-to-first fix (TTFF) with its dedicated real-time clock (RTC) oscillator.

The Teseo-VIC3DA module runs the GNSS firmware (X-CUBE-GNSS1) to perform all the GNSS operations including acquisition, tracking, navigation, and data output without any external memory support.

The X-NUCLEO-GNSS2A1 expansion board is compatible with the Arduino UNO R3 connector and the ST morpho connector. It can be plugged to an STM32 Nucleo development board and stacked with additional STM32 Nucleo expansion boards.

1 Schematic diagrams

Figure 1. X-NUCLEO-GNSS2A1 circuit schematic (1 of 3)

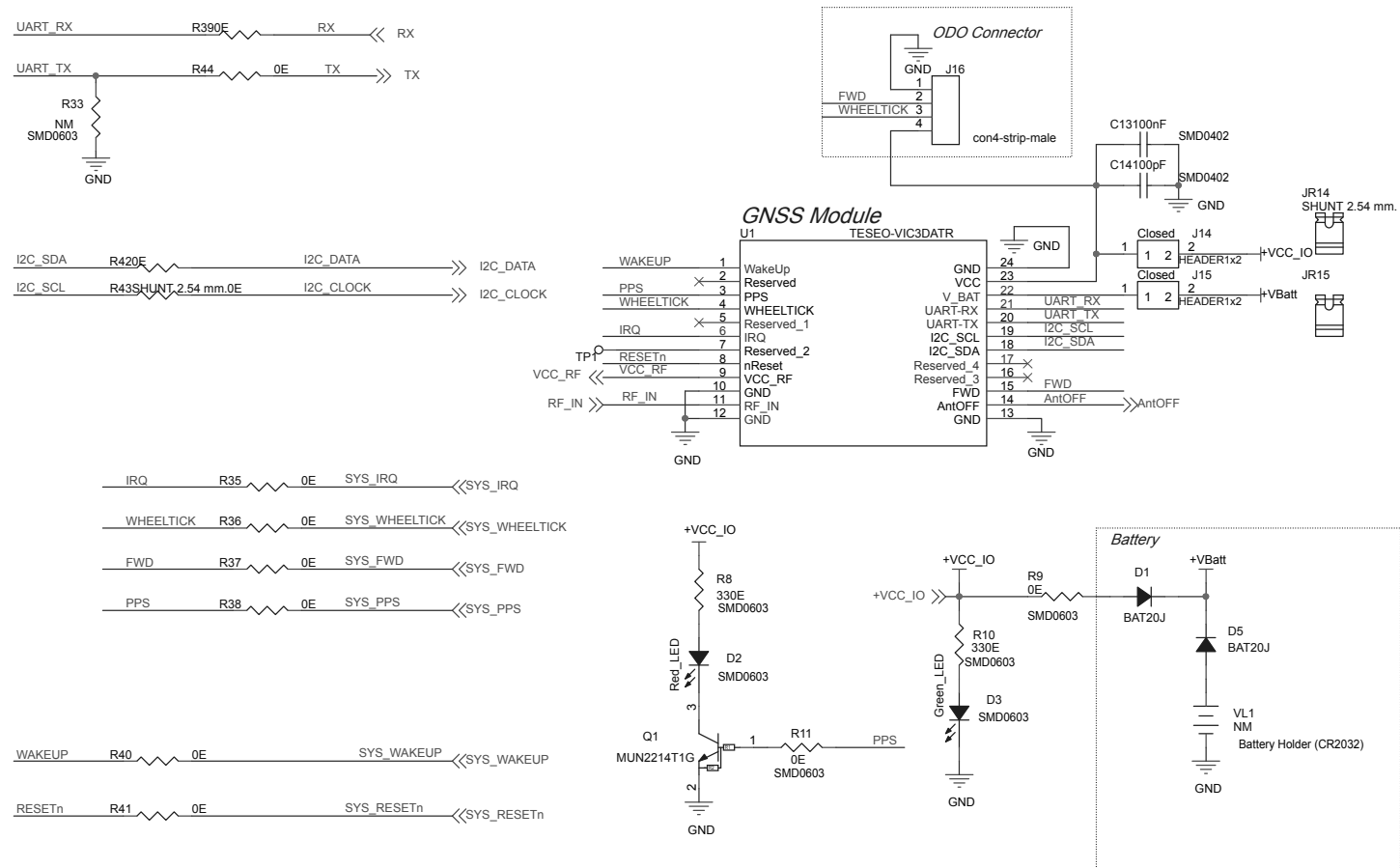


Figure 2. X-NUCLEO-GNSS2A1 circuit schematic (2 of 3)

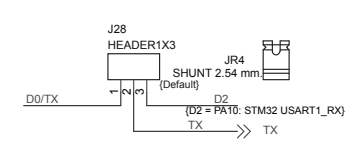
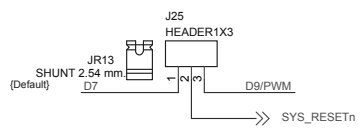
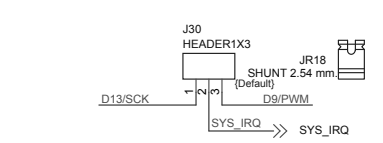
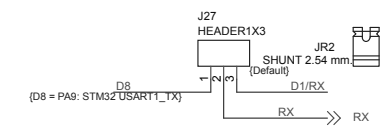
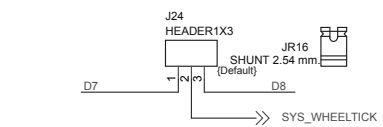
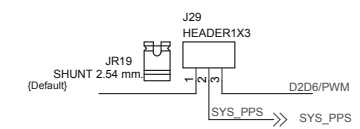
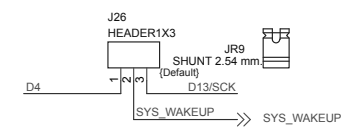
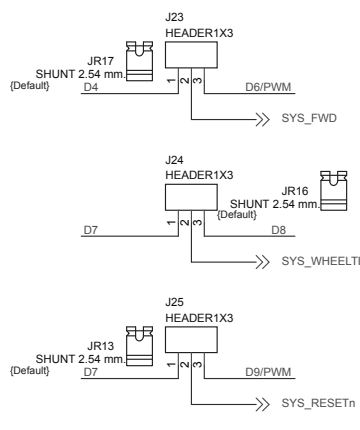
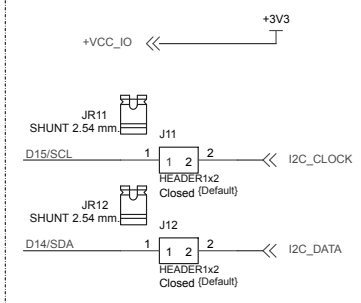
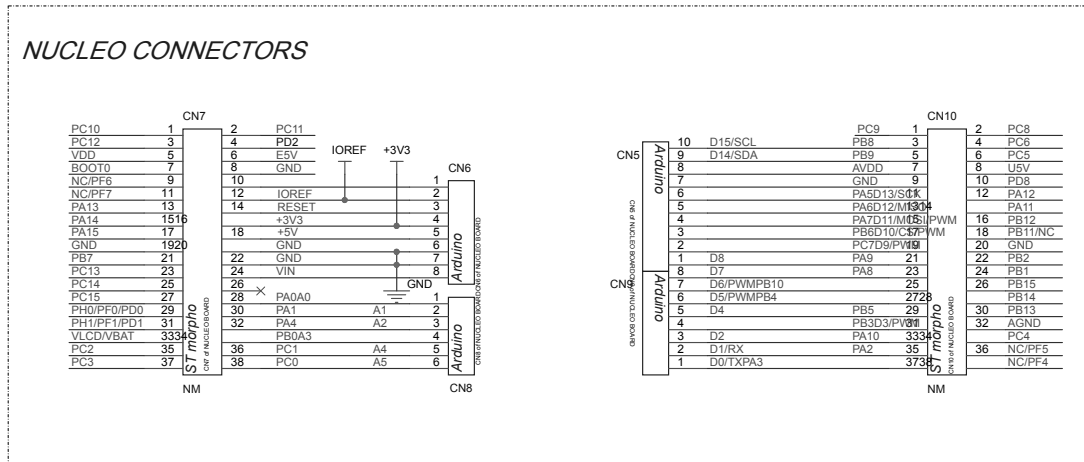
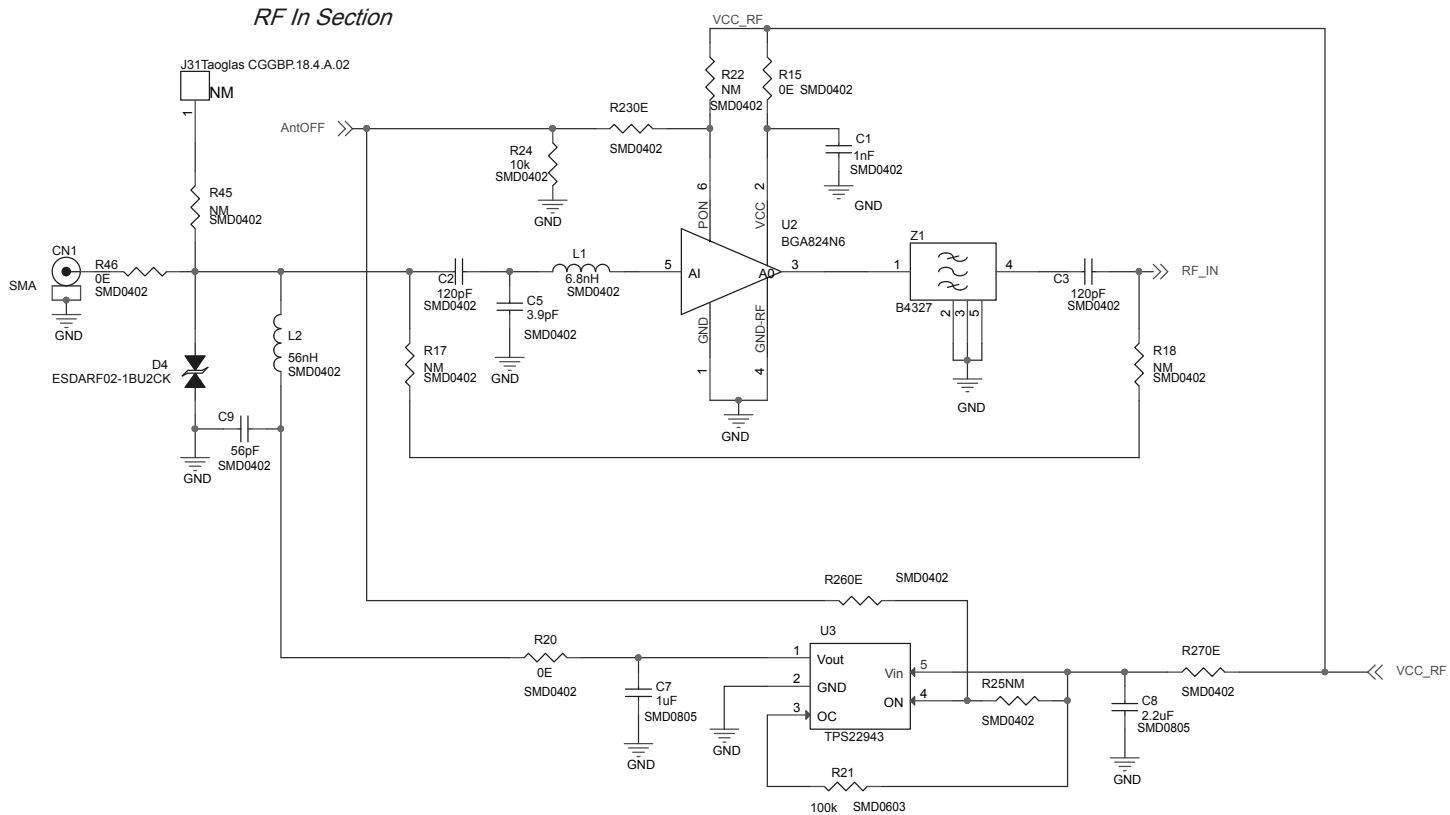


Figure 3. X-NUCLEO-GNSS2A1 circuit schematic (3 of 3)



2 Board versions

Table 1. X-NUCLEO-GNSS2A1 versions

PCB version	Schematic diagrams	Bill of materials
X\$NUCLEO-GNSS2A1 ⁽¹⁾	X\$NUCLEO-GNSS2A1 schematic diagrams	X\$NUCLEO-GNSS2A1 bill of materials

1. This code identifies the X-NUCLEO-GNSS2A1 expansion board first version. It is printed on the board PCB.

Revision history

Table 2. Document revision history

Date	Revision	Changes
25-Jul-2022	1	Initial release.

IMPORTANT NOTICE – 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 acknowledgment.

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. For additional information about ST trademarks, refer to www.st.com/trademarks. 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.

© 2022 STMicroelectronics – All rights reserved