

GNSS expansion board based on Teseo-LIV3F module for STM32 Nucleo



Features

- Operating supply voltage: 3.3 - 5 V
- Ambient temperature: -40/+85 °C
- Sensitivity: -162 dBm indoor (tracking mode)
- Interfaces:
 - a UART port
 - an I²C port
 - Configurable digital I/O timepulse
 - EXTINT input for wakeup
- NMEA protocol
- Assisted GNSS:
 - Predictive autonomous
 - Predictive server-based
 - Real-time server-based
- Compatible with [STM32 Nucleo](#) boards
- Compatible with the [Arduino™ UNO R3](#) connector
- LNA and SAW filter on the RF path
- SMA female antenna connector
- Battery holder
- RoHS and WEEE compliant

Product summary

GNSS expansion board based on Teseo-LIV3F module for STM32 Nucleo	X-NUCLEO-GNSS1A1
Tiny GNSS module	Teseo-LIV3F
Global navigation satellite system software expansion for STM32Cube	X-CUBE-GNSS1

Description

The [X-NUCLEO-GNSS1A1](#) expansion board is based on the [Teseo-LIV3F](#) tiny GNSS module.

It represents an affordable, easy-to-use, global navigation satellite system (GNSS) module, embedding a TeseoIII single die standalone positioning receiver IC, usable in different configurations in your [STM32 Nucleo](#) project.

The Teseo-LIV3F is a compact (9.7x10.1 mm) module that provides superior accuracy thanks to the on-board 26 MHz temperature compensated crystal oscillator (TCXO) and a reduced time-to-first fix (TTFF) with its dedicated 32 KHz real-time clock (RTC) oscillator.

The Teseo-LIV3F module runs the GNSS firmware ([X-CUBE-GNSS1](#)) to perform all GNSS operations including acquisition, tracking, navigation and data output without external memory support.

The X-NUCLEO-GNSS1A1 expansion board is compatible with the [Arduino™ UNO R3](#) connector and the [ST morpho](#) connector, so it can be plugged to the [STM32 Nucleo](#) development board and stacked with additional [STM32 Nucleo](#) expansion boards.

The GNSS antenna is included in the package.

1 Schematic diagram

Figure 1. X-NUCLEO-GNSS1A1 circuit schematic (1 of 3)

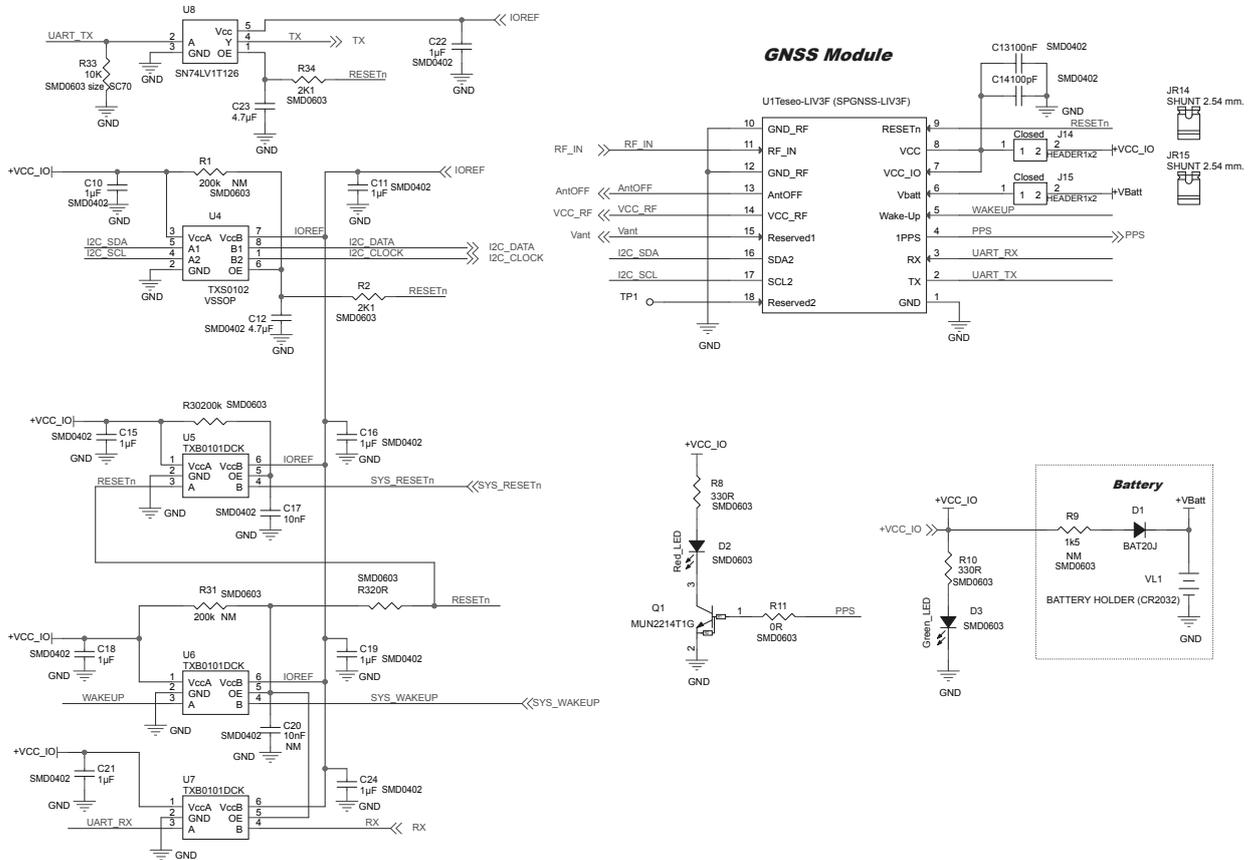


Figure 2. X-NUCLEO-GNSS1A1 circuit schematic (2 of 3)

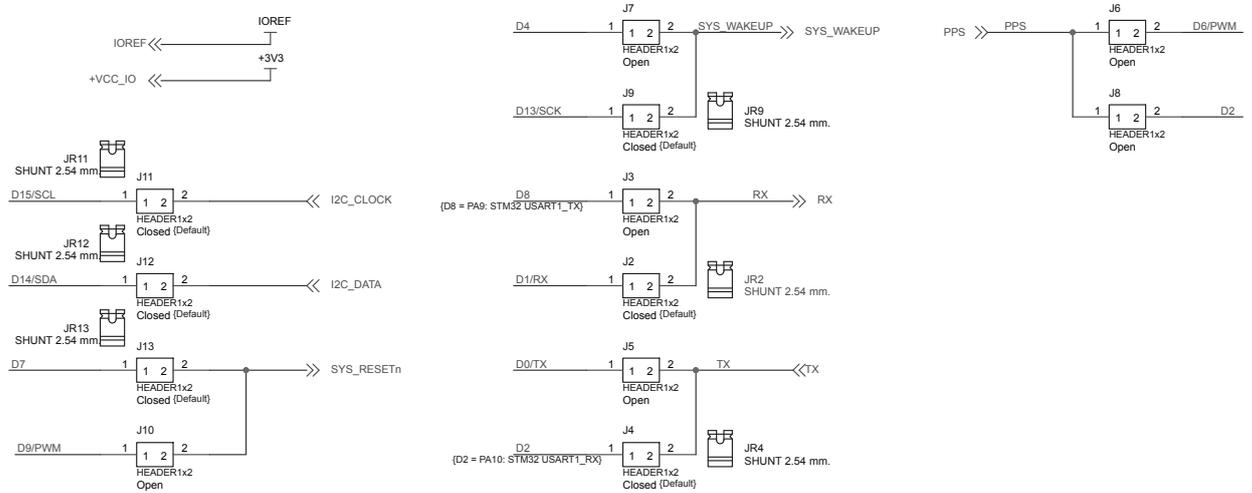
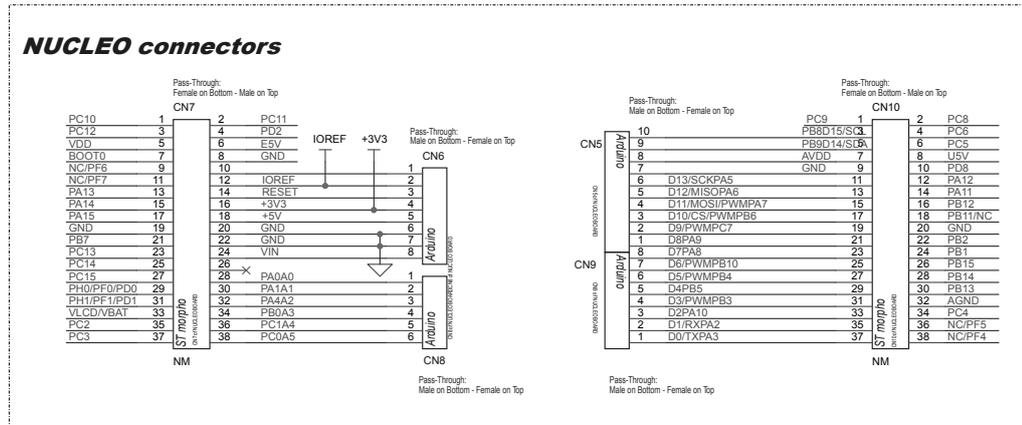
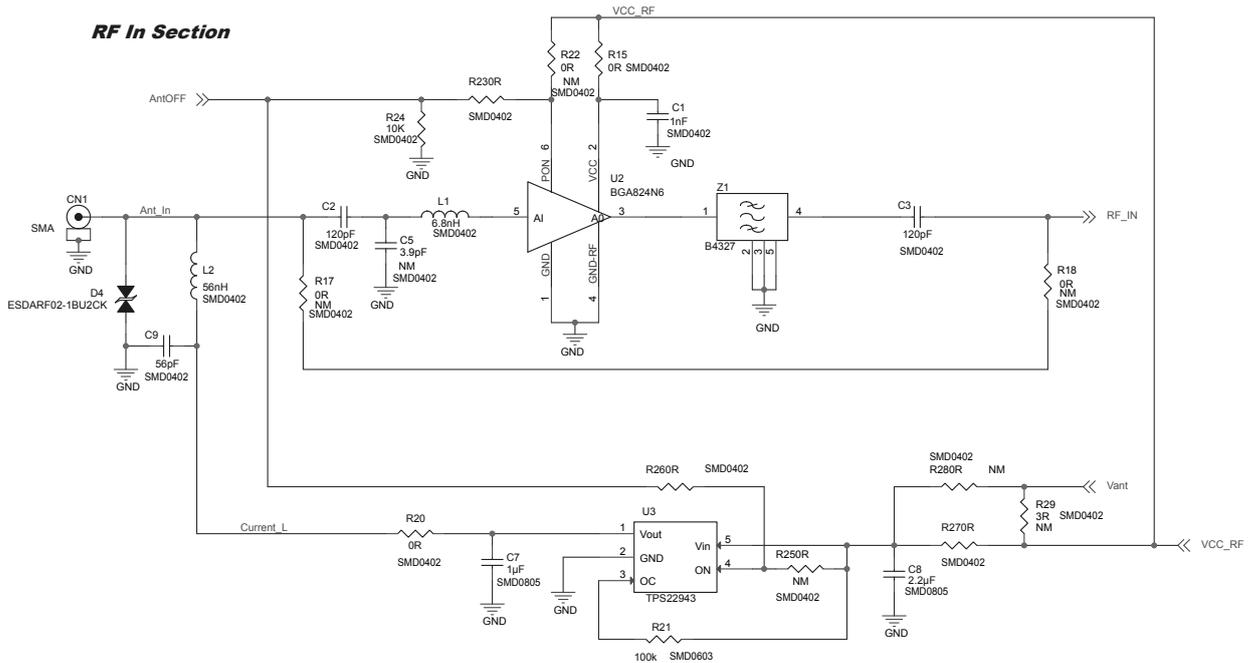


Figure 3. X-NUCLEO-GNSS1A1 circuit schematic (3 of 3)



Revision history

Table 1. Document revision history

Date	Version	Changes
05-Dec-2017	1	Initial release.
12-Oct-2018	2	Updated cover page image and Schematic diagram.
30-Jul-2024	3	Updated Description.

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