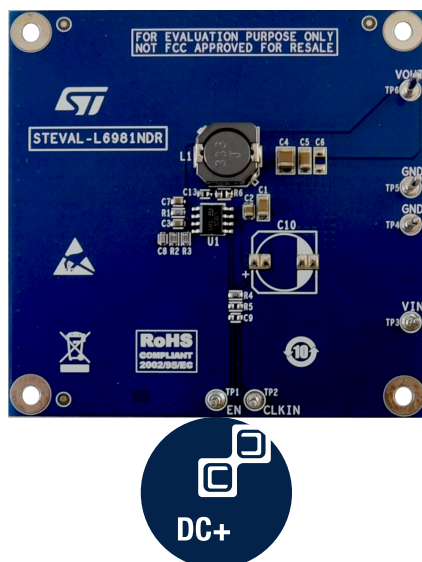


## 38 V, 1.5 A synchronous step-down switching regulator evaluation board based on the L6981NDR



### Features

- 3.5 V to 38 V operating input voltage
- Output voltage from 0.85 V to VIN
- 3.3 V and 5 V fixed output voltage versions
- 1.5 A DC output current
- 17  $\mu$ A operating quiescent current (fixed Vout part numbers)
- Internal compensation network
- Two different versions: LCM for high efficiency at light loads and LNM for noise sensitive applications
- 2  $\mu$ A shutdown current
- Internal soft-start
- Enable function
- Overvoltage protection
- Output voltage sequencing
- Thermal protection
- SO 8L package
- Synchronization with external clock for LNM devices

### Description

The **STEVAL-L6981NDR** is based on the **L6981NDR** synchronous monolithic step-down regulator delivering up to 1.5 A DC.

Its wide input voltage range makes the solution suitable for a broad range of applications.

The device implements peak current mode architecture in a SO 8L package with internal compensation to minimize design complexity and size.

The **L6981** is available in low consumption mode (LCM) and low noise mode (LNM) versions.

LCM maximizes efficiency at light-load with controlled output voltage ripple, making the device extremely suitable for battery-powered applications.

LNM makes the switching frequency constant and minimizes the output voltage ripple overload current range, meeting the specification for noise sensitive applications.

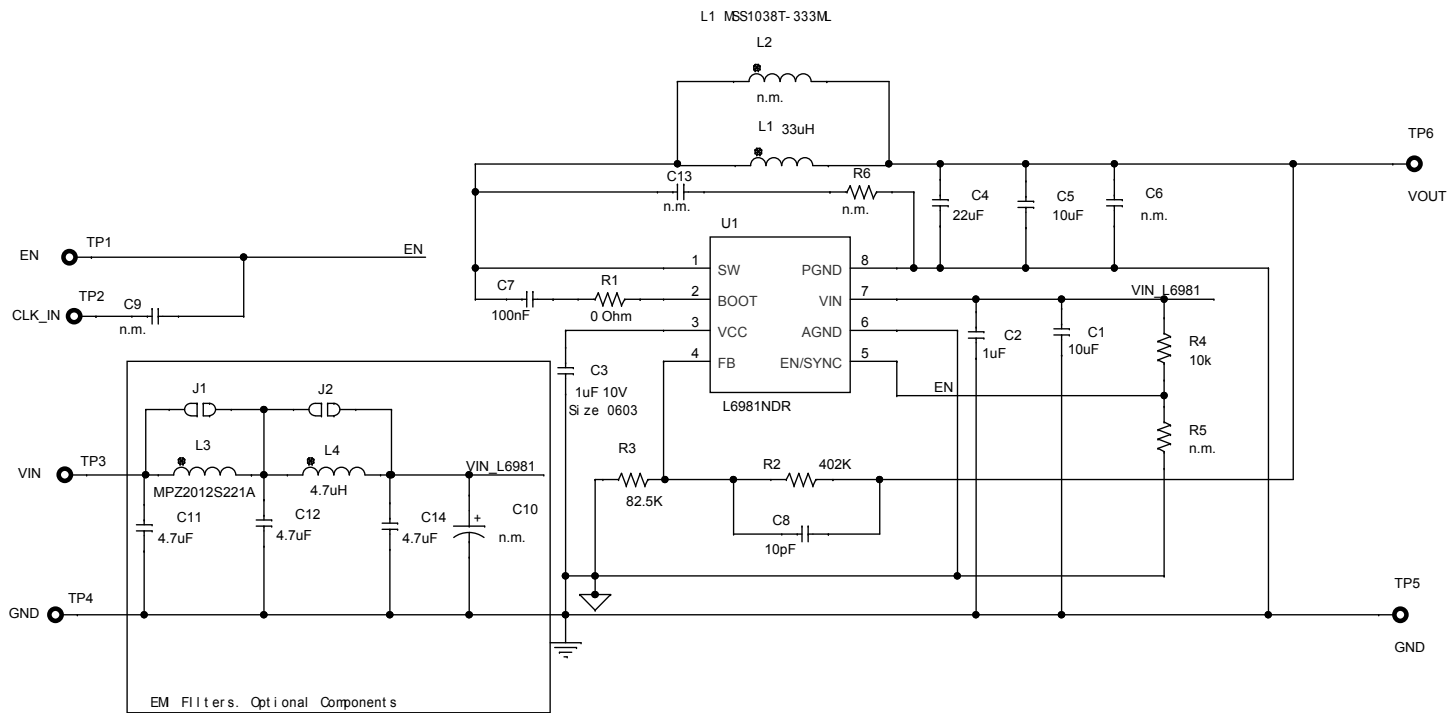
The EN pin manages the enable/disable function. The typical shutdown current is 2  $\mu$ A when disabled. When the EN pin is pulled up, the device is enabled and the internal 1.3 ms soft-start takes place.

Pulse-by-pulse current sensing on both power elements implements effective constant current protection while thermal shutdown prevents thermal run-away.

Product summary	
38 V, 1.5 A synchronous step-down switching regulator evaluation board based on the L6981NDR	<b>STEVAL-L6981NDR</b>
38 V, 1.5 A synchronous step-down converter with low quiescent current	<b>L6981NDR</b>
Applications	<b>Power tools</b>

## 1

**Figure 1. STEVAL-L6981NDR circuit schematic**



## Revision history

**Table 1. Document revision history**

Date	Version	Changes
16-Feb-2021	1	Initial release.
01-Mar-2021	2	Updated cover page description.

**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. For additional information about ST trademarks, please refer to [www.st.com/trademarks](http://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.

© 2021 STMicroelectronics – All rights reserved

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[STMicroelectronics:](#)

[STEVAL-L6981NDR](#)