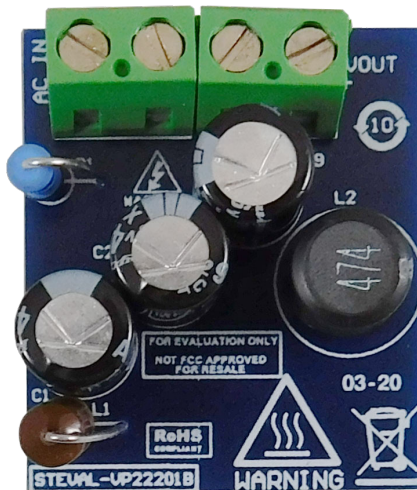


## 5 V - 360 mA buck converter based on VIPer222XSTR



### Features

- Universal input mains range: 85–265 V<sub>AC</sub>
- Frequency: 50-60Hz
- Output voltage: 5 V
- Output current: 360 mA
- Very compact size
- Stand-by mains consumption: < 18mW at 230 V<sub>AC</sub>
- Tight line and load regulation over the entire input and output range
- Meets IEC55022 Class B conducted EMI even with reduced EMI filter, thanks to the frequency jittering feature
- RoHS compliant

### Description

The STEVAL-VP22201B evaluation board implements a 5 V - 1.8 W isolated flyback converter developed for general purpose applications operating from 85 to 265 V<sub>AC</sub>.

The reference design is built around the VIPer222XSTR offline high-voltage converter from the VIPerPlus family, with 730 V Power MOSFET and PWM current-mode control.

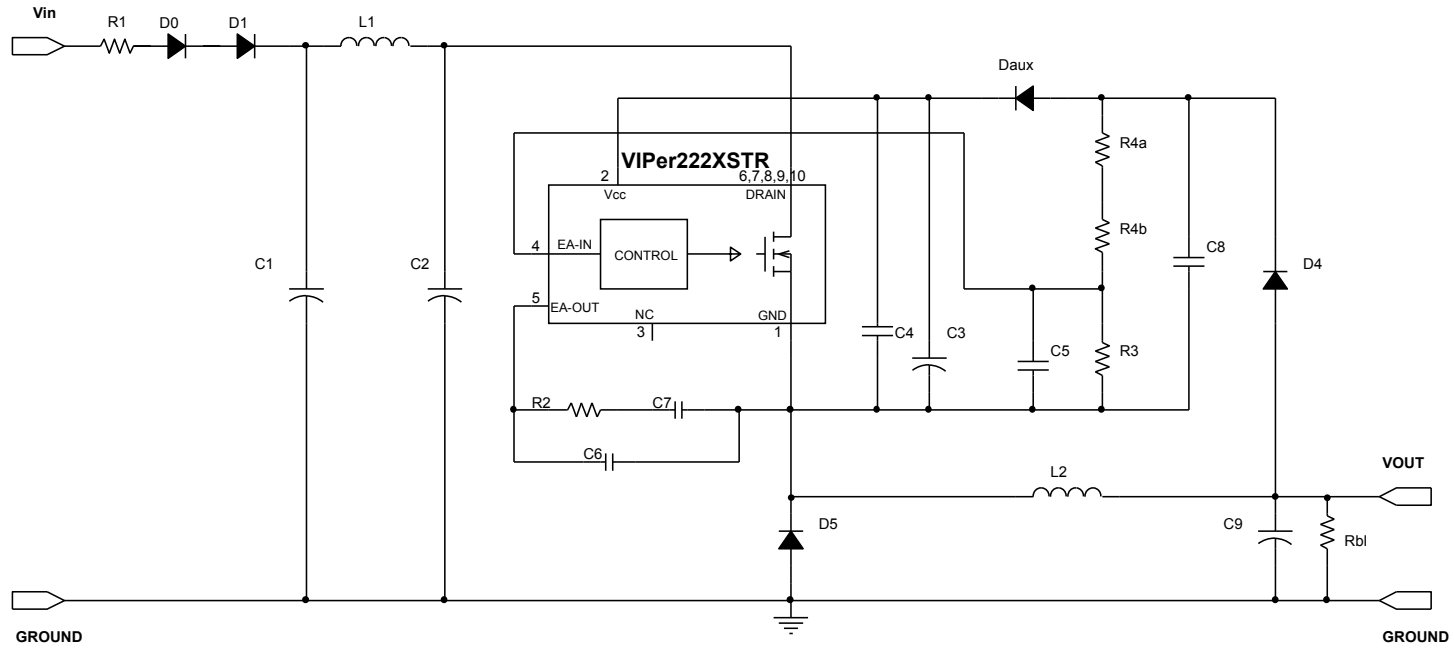
The main characteristics of the evaluation board are its small size and minimal BOM, low stand-by consumption and tight line and load regulation over the entire input and output range. Extremely low consumption under no-load condition is ensured thanks to burst mode operation that reduces the average switching frequency and minimizes all frequency related losses.

VIPer222XSTR operates at 30 kHz fixed frequency with frequency jittering to enable compliance with standards regarding electromagnetic disturbance.

Product summary	
5 V/360 mA buck converter based on VIPer222	STEVAL-VP22201B
high performance, high voltage converter with embedded Power MOSFET and PWM control	VIPer222
Applications	Buck and Buck-Boost Converters Non-Isolated Auxiliary Power Supply up to 20W

# 1 Schematic diagrams

Figure 1. STEVAL-VP22201B schematic diagram



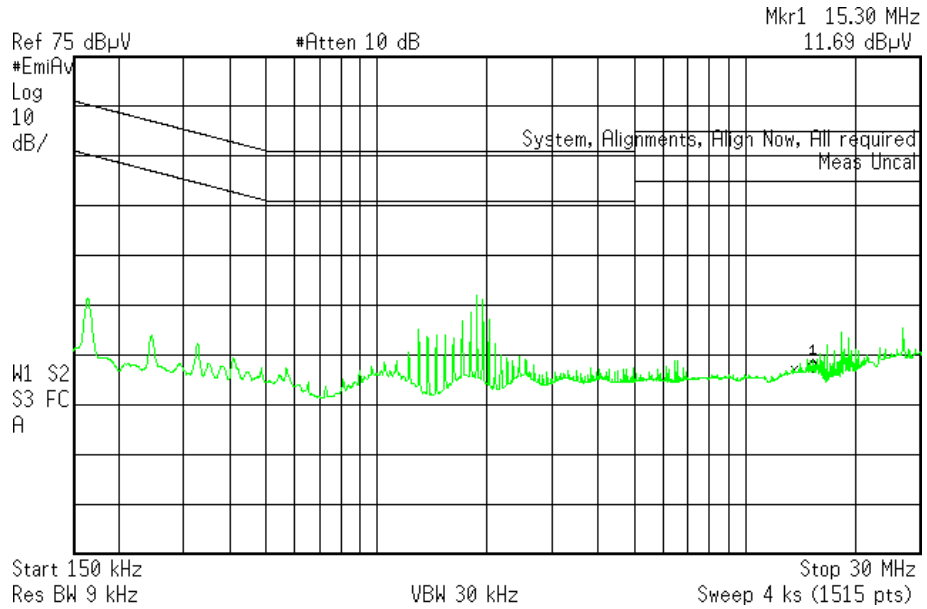
## 2 Standby consumption and efficiency

**Table 1.** STEVAL-VP22201B standby consumption

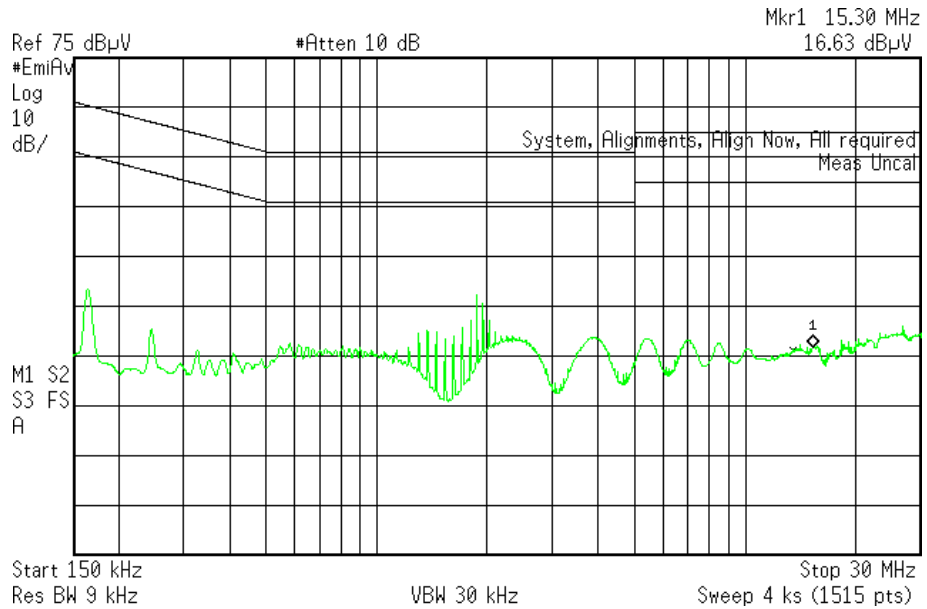
$V_{IN}$ [V <sub>AC</sub> ]	No load	
	$V_{OUT}$ [V]	$P_{IN}$ [mW]
115	5.70	11.97
230	5.89	16.47

### 3 Noise measurements

**Figure 2. STEVAL-VP22201B CE average measurement at 115 V<sub>AC</sub> full load**



**Figure 3. STEVAL-VP22201B CE average measurement at 230 V<sub>AC</sub> full load**



## Revision history

**Table 2. Document revision history**

Date	Version	Changes
18-Feb-2020	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. 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.

© 2020 STMicroelectronics – All rights reserved