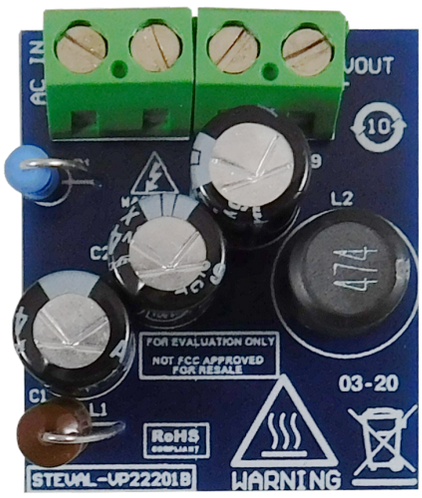
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STEVAL-VP22201B

Data brief

5 V - 360 mA buck converter based on VIPer222XSTR



VIPerPlus

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

Features

- Universal input mains range: 85–265 V_{AC}
- Frequency: 50-60Hz
- Output voltage: 5 V
- Output current: 360 mA
- Very compact size
- Stand-by mains consumption: < 18mW at 230 V_{AC}
- 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 buck converter developed for general purpose applications operating from 85 to 265 V_{AC}.

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.

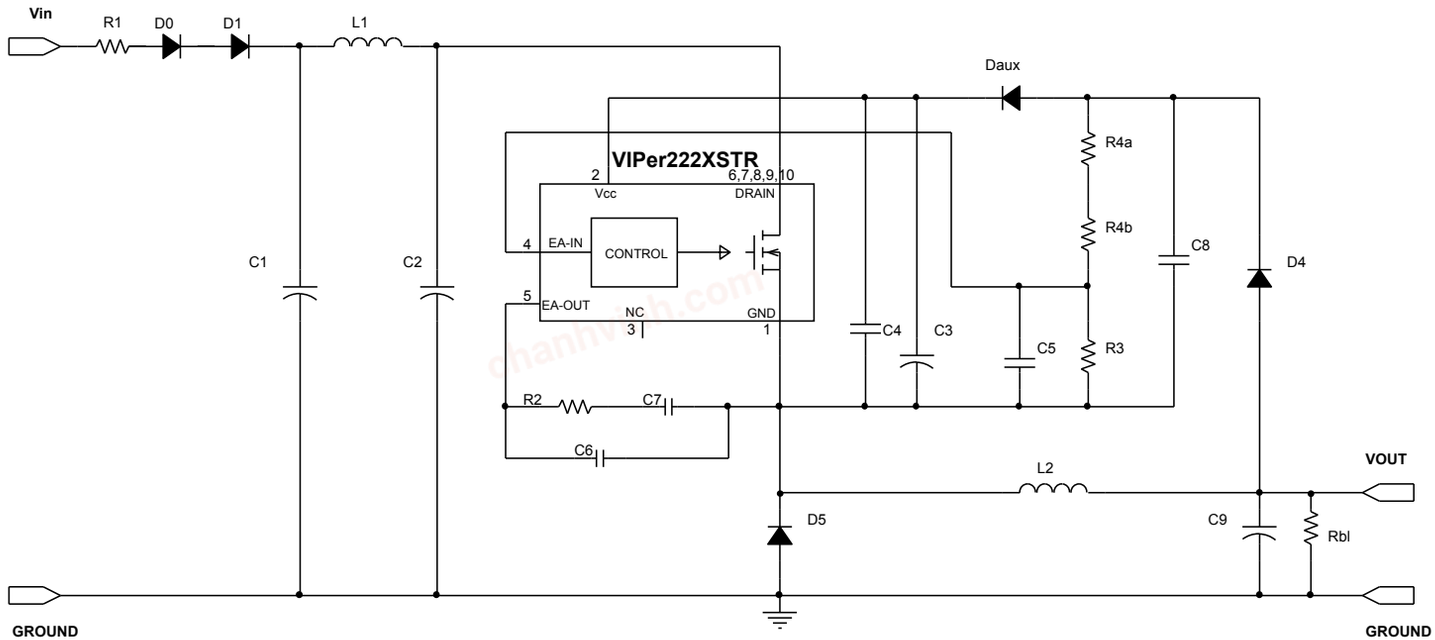
The main characteristics of the evaluation board are its small size and minimal BOM, low stand-by consumption and tight line and load regulation over the entire input and output range. Extremely low consumption under no-load condition is ensured thanks to burst mode operation that reduces the average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

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1 Schematic diagrams

Figure 1. **STEVAL-VP22201B schematic diagram**



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2 Standby consumption and efficiency

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

V_{IN} [V_{AC}]	No load	
	V_{OUT} [V]	P_{IN} [mW]
115	5.70	11.97
230	5.89	16.47

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3 Noise measurements

Figure 2. **STEVAL-VP22201B CE average measurement at 115 V_{AC} full load**

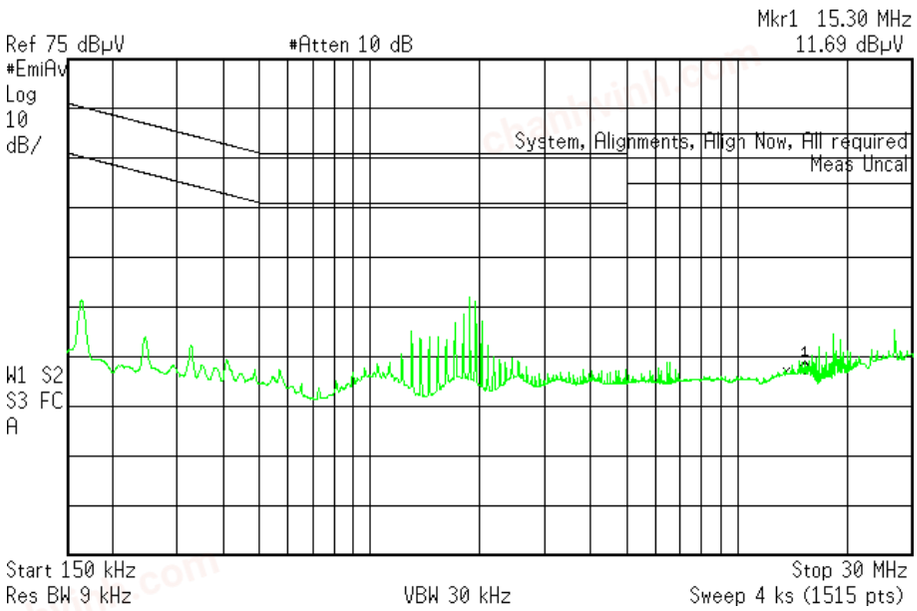
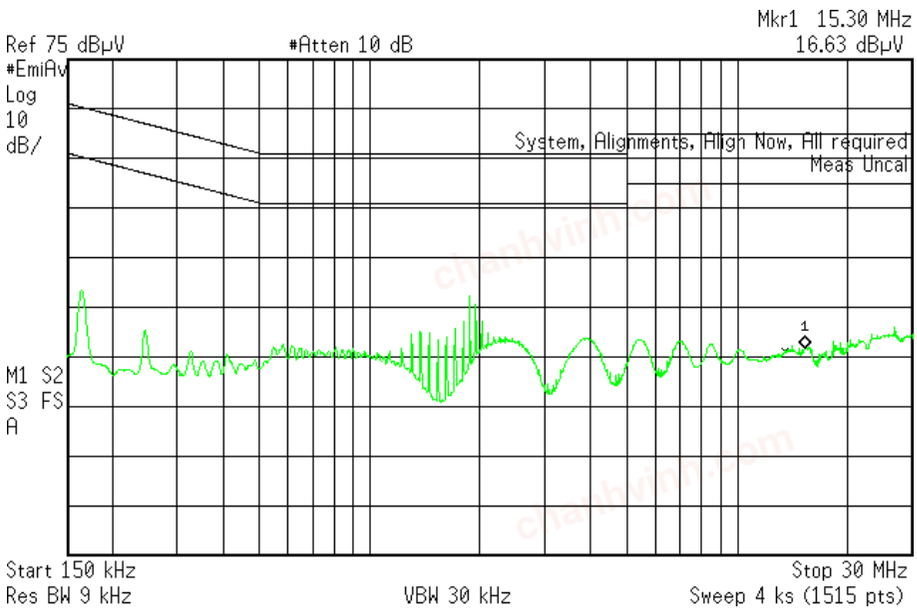


Figure 3. **STEVAL-VP22201B CE average measurement at 230 V_{AC} full load**



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Revision history

Table 2. **Document revision history**

Date	Version	Changes
18-Feb-2020	1	Initial release.
05-Jun-2020	2	Updated description.

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