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STEVAL-VP12201B

Data brief

15 V/200 mA buck converter based on VIPER122



Features

- Universal input mains range: 85–265 V_{AC}
- Frequency: 50-60 Hz
- Output voltage: 15 V
- Output current: 200 mA
- Very compact size
- Stand-by mains consumption: < 30mW at 230 V_{AC}
- Average efficiency: > 77%
- 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
- WEEE compliant
- RoHS compliant

Description

The STEVAL-VP12201B evaluation board implements a 15 V-3 W buck converter mains designed for general purpose applications, operating from 85 to 265 V_{AC}.

It is built around the VIPER122 offline high-voltage converter of the VIPerPlus family with a 730 V Power MOSFET and PWM current mode control.

The STEVAL-VP12201B features include its small size and minimal BOM, high efficiency, low standby consumption, and tight line and load regulation over the entire input and output range.

Burst mode operation allows extremely low consumption under no load and reduces the average switching frequency to minimize all frequency related losses.

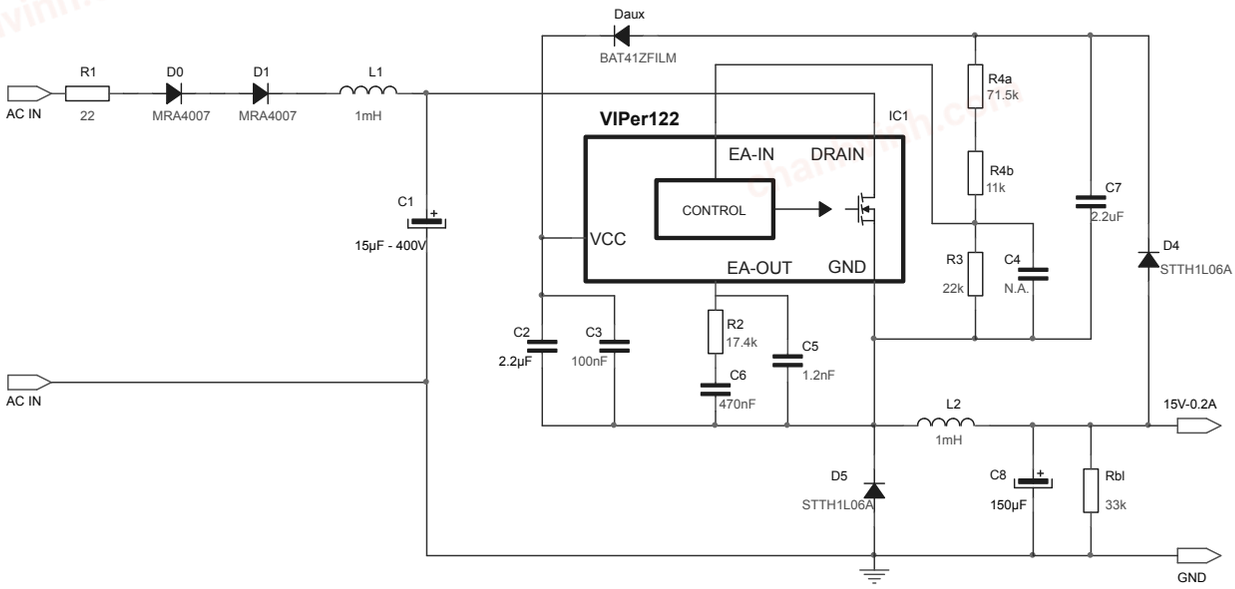
VIPER122 operates at a fixed frequency of 60 kHz with frequency jittering to meet electromagnetic disturbance standards.

Product summary	
15 V/200 mA buck converter based on VIPER122	STEVAL-VP12201B
High voltage converter	VIPER122

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1 Schematic diagram

Figure 1. **STEVAL-VP12201B circuit schematic**



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2 Line and load regulation, standby consumption and efficiency

Figure 2. STEVAL-VP12201B line-load regulation

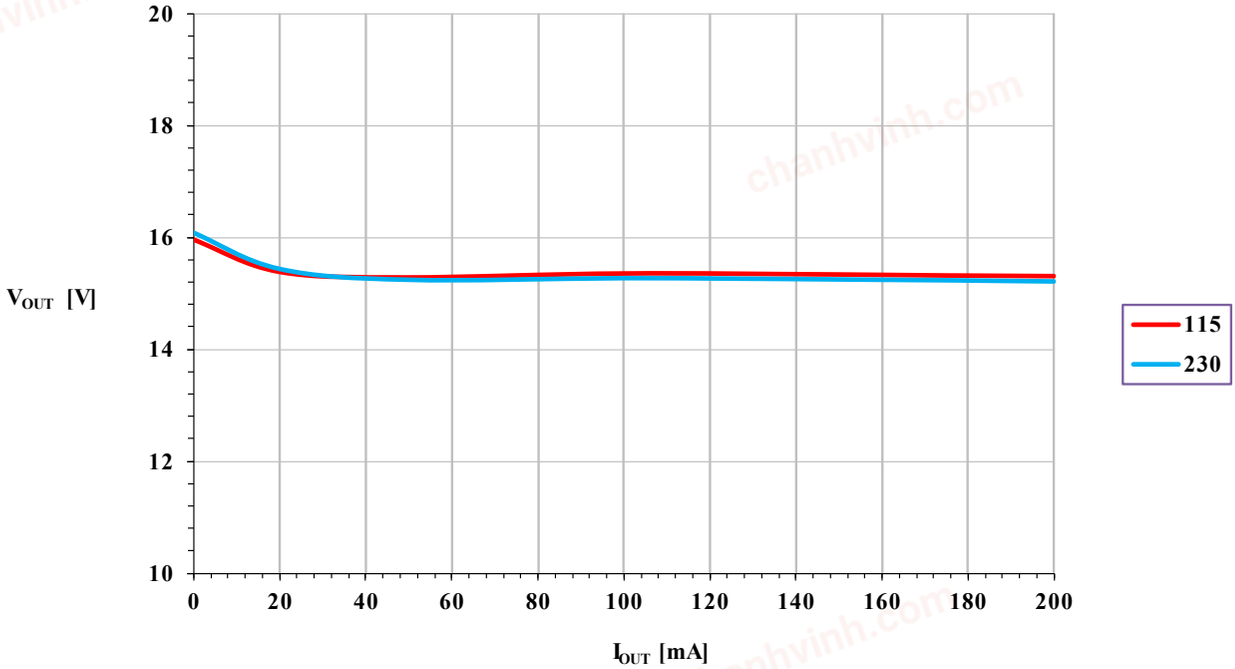
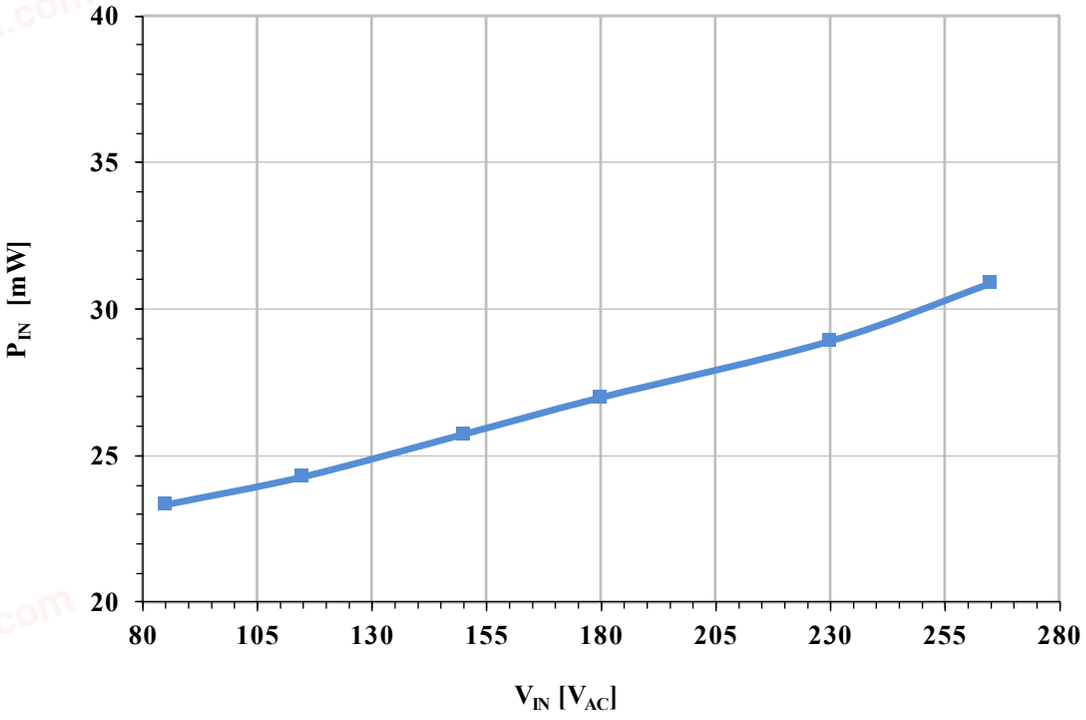
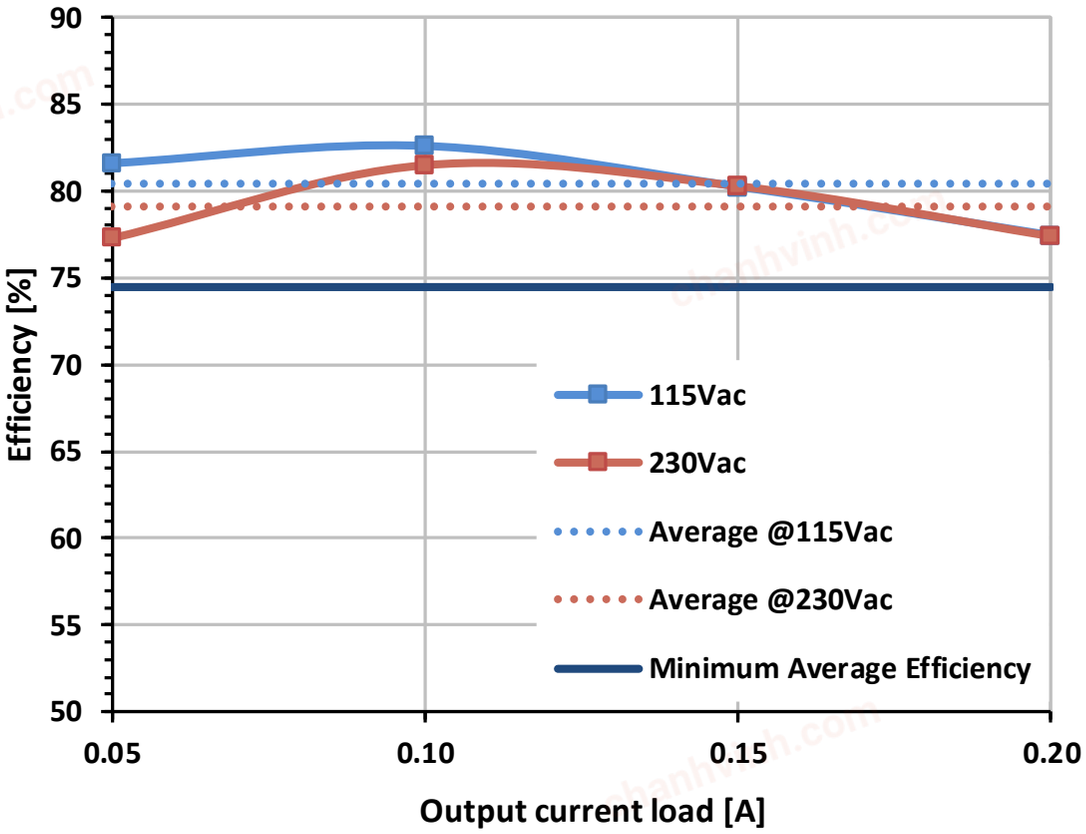


Figure 3. STEVAL-VP12201B standby consumption



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Figure 4. **STEVAL-VP12201B efficiency**



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3 Conducted noise measurements

Figure 5. **STEVAL-VP12201B CE average measurement at 115 V_{AC} full load**

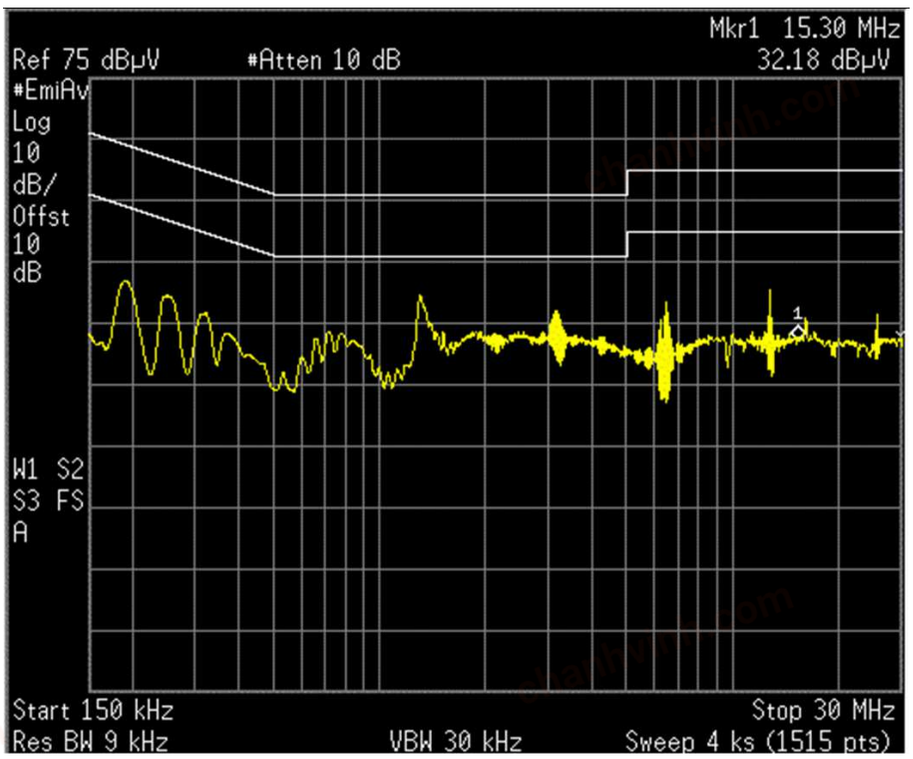
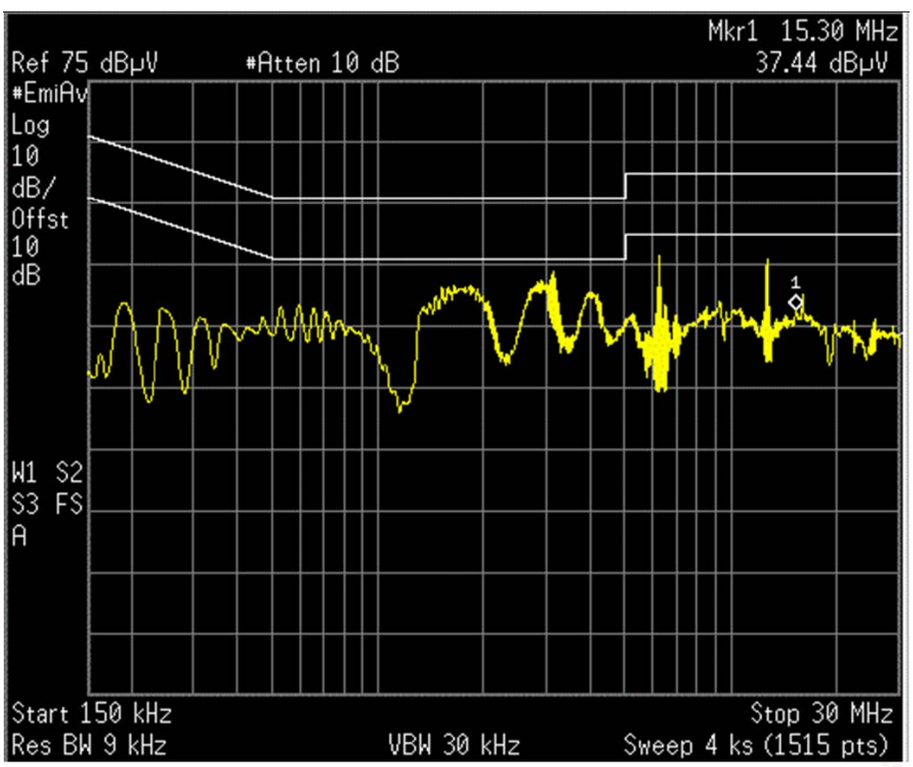


Figure 6. **STEVAL-VP12201B CE average measurement at 230 V_{AC} full load**



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Revision history

Table 1. **Document revision history**

Date	Version	Changes
05-Sep-2019	1	Initial release.

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