STEVAL-IMR002V1
2 kW/100 V RF demonstration board for 3 T MRI based on the STAC4932B

Features

- Output power: 2 kW
- Supply voltage: 100 V
- Frequency: 123 MHz
- Power gain: 19 dB
- Efficiency: 60%
- RoHS compliant

Description

The STEVAL-IMR002V1 demonstration board is based on the new generation of high voltage DMOS products housed in the STAC® air cavity package and capable of delivering an output power up to 1.2 kW for industrial, scientific, and medical applications such as 1.5 T and 3 T magnetic resonance imaging (MRI).

This new air-cavity technology now enables lower thermal resistance, lower weight, and reduced cost compared to devices in ceramic packages.

The STEVAL-IMR002V1 demonstration board implements the design of a 2 kW-100 V, 123 MHz Class AB peak power amplifier (PPA) for 3 Tesla MRI applications.

It uses double push-pull bolt-down devices, two STAC4932B - N-channel MOSFETs, capable of exceeding 2000 W @ 123 MHz with large signal gain of 19 dB in Class AB and a drain efficiency of 60%.

It almost doubles the output power of previous amplifiers using MOSFET transistors in standard ceramic packages.
1 Schematic circuit

Figure 1. Schematic diagram
2 Revision history

Table 1. Document revision history

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
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<tbody>
<tr>
<td>20-Dec-2011</td>
<td>1</td>
<td>Initial release.</td>
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