The RFEM24-250 is a fully integrated 2.45 GHz, 250 W RF generator module that includes full measurement capabilities. Its microcontroller includes an RF source that drives a 3-stage RF amplifier lineup. Its comprehensive command set controls parameters such as frequency, phase and power. The extensive measurement system provides calibrated data from multiple internal sensors and supports closed loop operations.

**FEATURES**
- RF module subsystem with integrated RF source
- 50 ohm output port
- I²C communications interface
- Comprehensive sensing includes:
  - forward and reflected RF power
  - current and voltage
  - temperature
- Integrated hardware-based fault protection
- Up to 4 modules can be combined and synchronized

**TYPICAL PERFORMANCE**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2400-2500 MHz</td>
</tr>
<tr>
<td>RF power output</td>
<td>250 W @ 30 V</td>
</tr>
<tr>
<td>Efficiency</td>
<td>57%</td>
</tr>
<tr>
<td>Output amplifier power</td>
<td>24-32 V, 15 A Max</td>
</tr>
<tr>
<td>VSWR</td>
<td>Unlimited</td>
</tr>
<tr>
<td>RF power measurement</td>
<td>± 5%</td>
</tr>
<tr>
<td>Control power</td>
<td>5 V, 0.5 A Max</td>
</tr>
</tbody>
</table>
CHOOSING A SOLUTION
Which Solution Works Best for Me?
- RFEL24-500
- RFEM24-250
- RFEP24-300

RFEM24-250 RF energy module includes:
- I2C controlled module
- Interface documentation for module runtime software

User needs to supply:
- Cooling system (heatsink, fans), 30-32 V, 500 W power supply unit, USB to I2C interface
- Software for interacting with the module

RFEL24-500 RF energy lab box is a complete turnkey solution including two modules and hardware peripherals as well as a PC-based GUI and API (object code only).

RFEP24-300 RF energy pallet is a reference design that includes pre-driver, driver and final-stage amplifiers.

Note: Schematics and layout of the hardware are not included (module is not a reference design)

HARDWARE OVERVIEW

Size: 5.5” x 3.2” x 1”
(14 cm x 8 cm x 2.5 cm)

BLOCK DIAGRAM