SAIREM’s GMS 200 solid state generator provides continuous wave and pulse mode output (option). Its power is adjustable from 0 to 200 W at frequencies ranging between 2400 and 2500 MHz.

**Pinpoint Power, Pulse Length and Frequency control:**

- Flexibility for your process
- Possibility to use a compact plasma source

This generator is designed for scientific and industrial applications, to be used with one or multiple MW applicators, to assure high reliability and small footprint. The protection against high reflected power and measurement of reflected power are performed via a built-in isolator.

**MAIN APPLICATIONS**

**PLASMA APPLICATIONS**
Plasma generation with compact plasma sources:

- **S-Wave** for atmospheric and low-pressure plasmas for radical creation, debacterization, ALD, medicine, etc.…
- **Aura-Wave** and **Hi-Wave** for low pressure plasmas for large surface treatment

**LABORATORY APPLICATIONS**

- Microwave-assisted liquid or solid chemistry
- Biochemistry
- Drying
- Heating
- Etc…
SOLID STATE MICROWAVE GENERATOR
200 W at 2450 MHz

Ref. GMS200WSM / GMS200WIP

MK003EN-A

KEY BENEFITS

DESIGN

- One module: compact and lightweight
- Microwave energy transmitted via coaxial cable
- Stable operation from 1 W & power adjustable in 1 W steps

TECHNOLOGY

- Semiconductor technology: no magnetron and therefore longer lifetime & no high voltage
- Very good frequency spectrum even at low power
- Built-in internal protection against mismatching and reflected power interlock
- Built-in isolator with automatic power reduction or switch off
- True RMS detector with linear measurement of reflected and forward power
- Very low ripple < 0.2 % RMS
- Adjustment of the microwave frequency: ± 50 MHz from the central frequency 2450 MHz
- Scan function allows running frequency sweep to find the optimum matching frequency. Up to two minima can be found and displayed on front panel. All measured data are then available through remote control and can be displayed on a PLC screen if necessary
- Sairem Auto-tune Algorithm\(^1\): allows to control the frequency automatically to minimize the reflected power

INTERNAL PULSE OPTION

- Decrease of thermal impact of plasmas thanks to pulse mode
- Exotic chemical reactions possible with short pulse width

 CONTROLS

The generator is wholly operated in local mode from the control panel located at the front of the power supply rack.

The front panel consists of a graphical LCD screen, 3 push buttons and a knob for menu navigation and power control.

All operating parameters, control status, and possible fault, forward power and reflected power are displayed on the screen. The forward power set-point is pre-displayed before starting.

\(^1\) Patent WO/2012/146870
INTERNAL PULSE Version (GMS 200W IP)

The internal pulse mode integrated with the IP generator can be set up from the digital control panel of the power supply unit; a remote control is available at the rear of the power supply unit via PROFIBUS®, CanOpen or Modbus (RS2332 or RS485).

All operating pulse parameters are displayed on the screen as follows:

- Pulse maximum, minimum and average power level
- Pulse duty cycle and frequency
- Time ON/OFF

MAIN PULSE PARAMETERS

- Frequency: from 0.2 to 5000 Hz
- Duty cycle range:
  - 1 - 99% (0.2 Hz to 100 Hz)
  - 10% - 99% (101 to 1000 Hz)
  - 50% - 99% (1001 to 5000 Hz)
- Rise and fall time: < 50 µs
- Minimum pulse duration: 100 µs
## SOLID STATE MICROWAVE GENERATOR

### 200 W at 2450 MHz

**Ref. GMS200WSM / GMS200WIP**

### KEY SPECIFICATIONS

<table>
<thead>
<tr>
<th>Reference</th>
<th>GMS200WSM / GMS200WIP (pulse option)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Presentation</strong></td>
<td>Power supply with N connector output</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>Central frequency: 2450 MHz Adjustable between 2400 and 2500 MHz</td>
</tr>
<tr>
<td><strong>Frequency resolution</strong></td>
<td>Frequency adjustable with 100 kHz step</td>
</tr>
<tr>
<td><strong>Output power</strong></td>
<td>0 to 200 W (adjustable with 1 W steps)</td>
</tr>
<tr>
<td><strong>Pulse capability (option)</strong></td>
<td>Integrated square pulse generator (up to 5 kHz at 50% duty cycle) – adjustable duty cycle, frequency or TON TOFF mode.</td>
</tr>
<tr>
<td><strong>Forward and reflected power measurement</strong></td>
<td>Coupler with true RMS detector – linear measurement, linear analogue readout.</td>
</tr>
<tr>
<td><strong>Ripple</strong></td>
<td>&lt; 0.2 % RMS</td>
</tr>
<tr>
<td><strong>Reflected power</strong></td>
<td>Adjustable from 1 W to 100 W</td>
</tr>
<tr>
<td><strong>Protection</strong></td>
<td>Possibility to control on reflected power limit</td>
</tr>
<tr>
<td><strong>Microwave output</strong></td>
<td>VSWR (built-in isolator with automatic power reduction), excess temperature (overheating interlock)</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
<td>Coaxial cable N-type female plug, 50 Ohm</td>
</tr>
<tr>
<td><strong>Remote (to be chosen)</strong></td>
<td>Local: front panel</td>
</tr>
<tr>
<td></td>
<td>Remote: Modbus on RS232 (MS) or Analogue (ST) or Modbus RS485/RS422 (MM) or Profibus® (PB) or CANOpen (CA). To be specified when ordering</td>
</tr>
<tr>
<td></td>
<td>Analogue input set point for forward power control, analogue output for forward and reflected power as a standard on M12 connector.</td>
</tr>
<tr>
<td><strong>Screen</strong></td>
<td>White over blue graphical LCD screen of 240 x 128 pixels</td>
</tr>
<tr>
<td><strong>Mains</strong></td>
<td>1 phase, 110V to 230V +/-10% VAC, 50/60 Hz</td>
</tr>
<tr>
<td><strong>Consumption</strong></td>
<td>690 VA max. at 200 W</td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td>Air</td>
</tr>
<tr>
<td></td>
<td>Ambient operating temperature: 5°C to 35°C (41°F to 72°F)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>11.8 kg</td>
</tr>
<tr>
<td><strong>Complies with norms</strong></td>
<td>Safety EN 61010-1: 2010 / EMC: EN 61326-1: 2013</td>
</tr>
<tr>
<td></td>
<td>A safety connector meets safety standard for machines and personnel</td>
</tr>
</tbody>
</table>
SOLID STATE MICROWAVE GENERATOR
200 W at 2450 MHz

Ref. GMS200WSM / GMS200WIP

MAI DIMENSIONS

Microwave and Radio Frequency Professional Solutions

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