

SOLID STATE MICROWAVE GENERATOR

450 W @ 2450 MHz

Ref. GMS 450 W



SAIREM's GMS solid state generators provide continuous wave (CW) output power adjustable from 0 to 450 W at frequencies ranging between **2400 MHz** and **2500 MHz**

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.

Advantages of the solid state generator vs magnetron generator:

- Compact size & light weight, microwave energy transmitted via coaxial cable
- Stable operation from microwave power levels from 1 W & power adjustable in 1 W step
- 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 < 0.4 % RMS
- Adjustment of the microwave frequency: ± 50 MHz from the central frequency 2450 MHz
- Sairem Auto-tune Algorithm which allows to control the frequency automatically in order to minimize the reflected power
- Compact **module** version available



Sairem Your partner in Microwave & Radio Frequency professional solutions

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TECHNICAL SPECIFICATIONS

REF	GMS450WSM56MPFCFMS1IRVFAIT A
Presentation	Power supply with 7/16 connector output
Frequency	Central frequency at 2450 MHz, adjustable between 2400 and 2500 MHz
Frequency resolution	Frequency adjustable with 100 kHz step
Matching	SAIREM auto-tuning algorithm : reflected power reduction by automatic frequency adjustment (Patent WO 2012/146870)
Output power	0 to 450 W (adjustable with 1 W step) $\pm 2 \%$
Pulse capability (option)	Square pulse up to 500 Hz at 50% duty cycle possible. Pulse control only by external analogue signal, no pulse control from the front panel available.
Power measurement	Forward and reflected, true RMS detector, linear measurement
Ripple	< 0.4 % RMS
Reflected power (RP)	Protected against 100 % RP. Adjustable level of maximum RP from 1 W to 150 W. Possibility to switch off power or to limit forward power when RP exceed level.
Protection functions	VSWR (built-in isolator with automatic power reduction or switch off), excess temperature (overheating interlock).
Microwave output	Coaxial output 7/16 type female plug, 50 Ohm – safety feature in case of loose connection.
Control	Local: front panel Remote: Modbus RTU RS232 (standard version) <u>or</u> RS485 <u>or</u> Ethernet <u>or</u> ProfiBus <u>or</u> CANOpen. <u>To be specified when ordering.</u> Analogue input set point for forward power control, analogue output for forward and reflected power
Mains	1 phase, 110V to 240VAC, 50/60 Hz
Cooling & operation requirements	Water cooled; flow and temperature sensors included. Quick water connectors included. Water cooling: minimum 2 L/min @ 1.5 bar, 17 °C to 22 °C (63 °F to 72 °F). Ambient operating temperature: 5 to 35 °C (41 °F to 95 °F). Relative humidity below dew point.
Weight	12 kg
Security	A safety connector ensures safety standard for machines and personnel

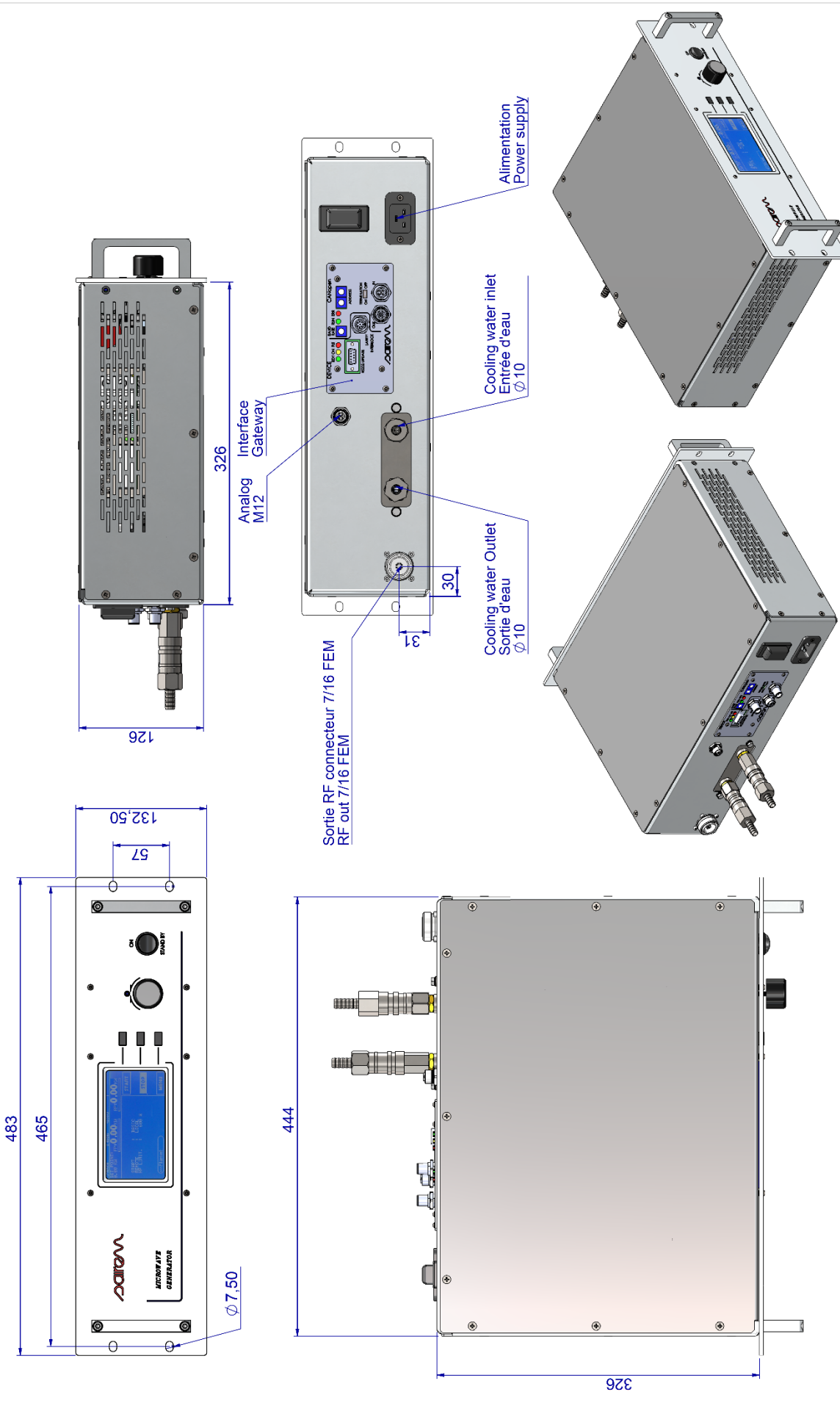
CONTROL AND OPERATION OF MICROWAVE GENERATORS WITH DIGITAL DISPLAY

The generator with digital front panel 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 large white over blue graphical LCD screen 240 x 128 pixels, 3 push buttons and a knob for menu navigation and power control.



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



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		GMS 450		TITRE: GMS 450 MW GENERATOR 2450 MHz 450 W	
		A3		FORMAT: A3 LCHÈLLE: 1:3.5	
		11.70		WEIGHT: 11.70 DESIGN NO: 3449-COM	
INDEX	DATE	DESIGN	VERIFIE	APPROUVE	EMISSION ORIGINALE
A	07/07/2016	BDE			MODIFICATION DU DESSIN