

902-928 MHZ SOLID-STATE HIGH-POWER MICROWAVE GENERATOR

PTL Series

Frequency Range

- Frequency range: full 902–928 MHz ISM band
- Frequency resolution: 1 kHz
- Absolute frequency accuracy: +/- 2.5 ppm
- Frequency stability: +/- 0.5 ppm
- Phase adjustment 0–360°, 1° resolution
- Operating modes: fixed single frequency, full/partial band sweep, or optimized frequency hopping
- Frequency sweep step speed: 1 Hz to 10 kHz adjustable
- Frequency change response time: <1 msec

Microwave Power

- Power Output: Based on NXP's PN MRF13750H

Model	Maximum Power	Minimum Across Band
PTL-4	12 kW	10 kW
PTL-8	24 kW	20 kW
PTL-32	80 kW	75 kW

- Power set resolution: 1 Watt at full power
- Harmonic suppression: >40 dBc
- Forward and reflected power (S11 and S21) real-time display
- Power control accuracy: 0.1%
- Power measurement accuracy: forward power 0.1%, reflected power 0.5%
- Maximum mismatch for full power output: 6 dB return loss = 3:1 VSWR
- Integral isolators protect against load mismatch
- Proportional power fold back under excessive load mismatch
- Automatic load-tuning
- Automatic return loss mapping across the band
- Power switching speed: <1 msec

Modulation

- Modes: CW, pulse width modulation, or user-defined waveform
- PWM pulse mode: 10 kHz maximum pulse rate, 0–100% duty cycle
- Exciter output and RF input connectors permit multiple generators to be phase-coherent



Control System

- Windows-based interactive user control software
- USB 2.0 interface to Windows PC
- Manual or automatic operation
- Built-in test features
- LabView™ instrument driver available

Wired Control Interface

- Digital outputs (0–24 V sinking): ready, RF-on, fault
- Digital inputs (5–24 V sinking): RF-on/off, emergency stop loop, arc detect
- Arc detect input to RF power-off delay time: <10 µsec
- Analog output (4–20 mA): RF power output
- Analog Input: (4–20 mA): RF power control



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External Connectors

- RF output: WR-975 waveguide (individual 7/16 DIN connections optional)
- External RF input: SMA, 0 dBm nominal
- External exciter output: SMA, 0 dBm nominal
- External control: 16-pin rectangular connector with screw terminal connections

Power

- AC mains power input: 180–264 / 342–528 VAC three-phase, 50/60 Hz
 - Maximum current per phase:
 - 4-blade: 95 A / 65 A
 - 8-blade: 190 A / 130 A
 - 32-blade: 660 A / 455 A
 - Inrush current: 2.5 x maximum current
- Power supply: high-efficiency 50 VDC switch mode
- Line-to-RF power conversion efficiency: >55% at maximum power
- Transient over-voltage: 15% greater than voltage rating max
- EN60950-1, IEC60950-1, CE

Environmental

- Water-cooled
- Ambient environmental temperature: 0°–50° C
- Humidity: non-condensing
- Electromagnetic susceptibility: designed to meet EN61000-4; -2, -3, -4, -5, -6, -8

Dimensions and Weight

4 - 8 Blade systems

- Dimensions: 56.5"-58.25" H x 48" L x 26.4" W (height is adjustable with levelling feet)
- Weight: 800-1200 lb (dependent on system configuration)

32 Blade system

- Dimensions: 72" H x 60" L x 50" W (height is adjustable with levelling feet)
- Weight: 2700 lb (dependent on system configuration)



PrecisePower Control Screen

PrecisePower™



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