



RFG-1000

1000 Watt RF Power Generator



The RFG-1000 provides the HIFU researcher with a powerful tool to replace stacks of laboratory equipment such as signal generators, pulse generators, timing circuits, and power amplifiers.

- The USB interface allows the user to program the desired working frequency, power level, duration, and any pulse strings desired. If pulse mode is desired, the user may enter values for pulse repetition frequency, duty cycle, and length of pulse trains. All information is broadcast from the unit back to a host computer for logging purposes. Any error conditions are also reported to the USB port.
- The RFG-1000 may be combined with other JJ&A RF Power Generators to drive phased or annular arrays if desired.
- An emergency shutdown circuit detects if the transducer has been lifted off of the test object, failed, or otherwise lost its acoustic connection to the test material.
- The RFG-1000 can be used as a stand-alone RF power generator for CW or Pulse operation, or it can work in concert with other JJ&A HIFU products to provide a complete laboratory system.

RFG-1000 Features:

- Adjustable power level between 1 and 1000 watts output
- CW or Pulse modes
 - CW mode: 1-200 watts. Pulse mode: 1-1000 watts
- Standard 50 ohm output impedance
- Built-in frequency generator
- Frequency ranges available from 700 KHz to 5 MHz
- Built-in timing pulse generator
- Small size: 3 x 6 x 9 inches (~8 x 15 x 23 cm)
- Light weight: 3 pounds (1.4 kg)
- Replaces stacks of laboratory equipment
- Standard USB interface for all controls
- Emergency shutdown button and inputs
- Automatic safety shutdown in case of incorrect transducer match
- Available as an OEM module
- Multiple units can be combined for phased or annular arrays
- Continuous operation or can be triggered externally
- All JJ&A HIFU products network together for cohesive system control
- 120 volts AC, 5 amps maximum

Additional JJ&A HIFU products for use with the RFG-1000 include:

- **RFG-100 RF Generator:** Same features as the RFG-1000, except the maximum power output is 100 watts.
- **TMN-100 Transducer Matching Network:** Automatically computes the proper impedance transformation between the power source and transducer without the need for additional inductors and capacitors.
- **PF-500 RF Power Fuse:** This module is a stand-alone RF power sentry used to protect transducers from accidental overpower damage. Placed in-line between the RF power generator and the transducer, it passes the signal unless the power level exceeds the desired limits.
- **PM-1000 Power Meter:** Pulse power and SWR monitoring module. Measures SWR (Standing Wave Ratio), forward power, and reflected power in either CW or Pulse modes. Very unique in that it will function properly with fast pulses. Information is sent back to the user via standard USB interface. This information can be used to halt the power generator if a high SWR condition suddenly exists.
- **DDL-1000 Digital Dummy Load:** Combination dummy load and power sensor with USB port. Useful for dry runs and diagnostics. Use to confirm that proper power levels are set.
- **RX-1 Receiver:** Used to present baseband I and Q (In phase and Quadrature) output signals for signal analysis. Receiver locks onto transmitting frequency and IQ outputs show phase information of received signal. Analog outputs, ready for any -5 to +5 volt digitizer.
- **CIRC-1000 Circulator:** Used to isolate transmitted and received signals, or can be used alone as a T/R switch.
- **FS-1 Foot Switch:** Accessory for use during experiments to control when the power generators are on.
- **HWS-1 HIFU Work Station:** Wet-lab work area with adjustable arms and clamps for holding transducers, test gels, cameras, etc. Includes a high intensity illuminator, 7 MP digital camera for still and video with USB interface, plus a stand-alone video screen on the workstation that is used to zoom in and adjust the experiment during setup. Work area is 18 x 24 inches (46 x 61 cm).