



UHF20KP RF AMPLIFIER

QEI Corporation can meet the needs of your custom system design. QEI designed the UHF20KP air cooled, long pulse RF Amplifier specifically for the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory (ORNL).

The amplifier is designed to operate at 402.5 megahertz with a full 20 kilowatt output with a pulse width up to 1 milliseconds and a duty factor of 6%.

The entire RF amplifier, including the driver is housed in a single 61cm x 86cm x 193cm steel cabinet.

The UHF20KP comes complete with a solid state driver amplifier, an air cooled Intermediate Power Amplifier using a 3CX1500C7 triode power grid tube, and the power amplifier which utilizes a 3CX5000U7 triode air cooled power grid tube.

Remote control capability is available from the rear of the amplifier. All remote control I/O are either relay contact, TTL level, or -10VDC to +10VDC ground referenced signals.

Full metering of all power supplies and interstage directional coupler readings along with

controls and indicators are located on the center mounted, slide out meter panel assembly.



The anode power supply develops 6400 Volts for the PA and 3200 Volts for the IPA. The amplifier is completely protected against IPA and PA anode and grid overloads along with VSWR and over temperature faults. Safety interlocks are located on all compartments where high voltage may be exposed.

The driver assembly is a self contained all solid state amplifier that has a power output of about 175 Watts from an input of less than 0dBm. The IPA power output is approximately 2400 Watts peak to drive the PA to 20 kilowatt peak power output.

Designed for 208 VAC three phase mains power, other three phase mains power voltages are available.

Although the UHF20KP RF Amplifier was specifically designed to SNS specifications, QEI can modify and design an amplifier to your specific needs.

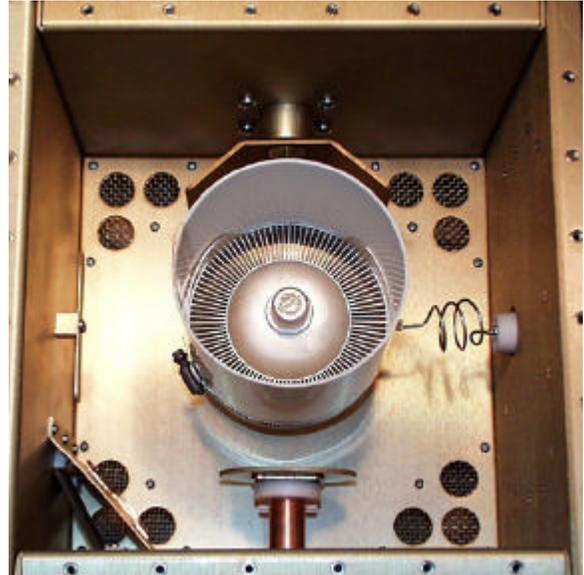
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GENERAL

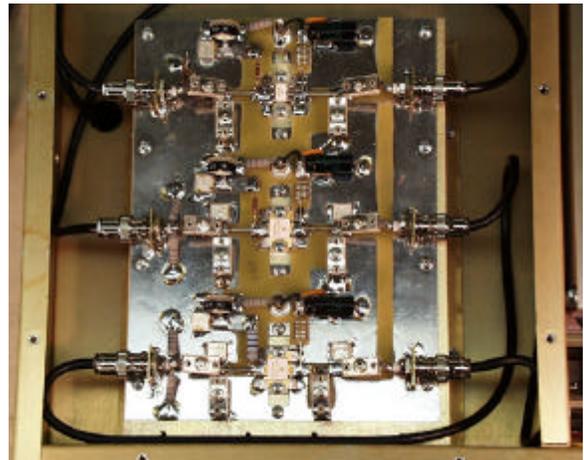
Power Output 0-20 kW peak pulse
Frequency Range:..... 402.5 MHz
Full Power Bandwidth:greater than 200 KHz
Pulse Width: 1 msec
Pulse Repetition Rate:..... 60 Hz
Duty Factor:.....greater than 6%
Pulse Flatness:better than 10% of set value
VSWR: 1.6:1 max. at full output
Tube Complement:
IPA3CX1500C7
PA3CX5000U7
Output Connector: 7/8 inch EIA flange
RF Load Impedance:.....50 Ohms
Input Power for 20 kW Peak Pulse: .0 dBm
Linearity (10-90% of Rated Power):+/- 3 dB
in amplitude and +/- 5 degrees in phase
Harmonic Distortion: ...better than -30 dBc

ELECTRICAL/MECHANICAL

Mains AC Power:..... 208 VAC, 60 Hz, three
phase (other voltages and configurations
available)
Ambient Temperature Range:
Operating: -15° C to +40° C
Startup: 0° C to +50° C
Maximum Humidity:.. 95% non-condensing
Maximum Altitude:10,000 feet AMSL
Cabinet Size:24" (61 cm) W x 34" (86 cm) D
x 76" (193 cm) H



PA Cavity



Solid State Driver Amplifier

Years of field proven experience in custom design will assure you of the best possible product, with the most effective interface and monitoring system.

QEI is always available to discuss your present and future needs. Please contact us so that we may quote on your project.

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