

There are a couple of things that may be causing a problem.

To use the RPR-4000 with an arbitrary waveform generator you must set the frequency on the front panel to 00.000000Hz and you must set the triggering to "EXT". If you have not done these steps the RPR-4000 will continue to use its internal trigger and internal signal along with the arbitrary waveform from the rear panel. This will most likely result in a high duty cycle situation and most likely will blow out the high voltage fuse.

The red light on the rear panel is an indicator that the signal coming in from your external source (your arbitrary waveform generator) is at too high of a duty cycle. When you set up per the instructions the repetition rate, pulse width and frequency are controlled by your arbitrary waveform generator. The only things you would use the RPR-4000 front panel controls for is to adjust the output level of the gated amplifier and control the receiver functions if you are using the receiver.

Please check your arbitrary waveform generator and make sure that the signals you are putting in do not exceed the duty cycle of the RPR-4000. If check the output of the arbitrary waveform generator and find that it is less than a 1% duty cycle and the red light on the rear of the RPR-4000 is still on the protection circuit may have gotten damaged.

Below I have included the instructions on how to use the RPR-4000 with an external signal generator with some notes in red explaining what each step does.

AMPLIFIER MODE

The RPR-4000 may be used as an amplifier by connecting an arbitrary waveform generator to the rear panel inputs.

Apply a sine wave to the "CW" input on the rear panel. The signal must not exceed 1V P/P.

Signals greater than 1V P/P will result in distortion at the output.

Apply a positive TTL gate to the "AMP GATE INPUT" which goes positive (+5V) at the beginning of the burst and goes to zero volts at the end of the burst.

Care must be taken to avoid applying the wrong polarity gate as this will effect the output duty cycle and may cause damage to the unit. Wrong polarity would turn on the amplifier at an excess duty cycle.

Set the frequency setting on the front console to 00.000000 Hz.

This step shuts off the RPR-4000's internal generation of an RF signal,

Set the trigger setting to "EXT".

This step shuts off the RPR-4000's internal generation of a gate.

Maximum duty cycle must be limited to 1% by the user. Allowing higher duty cycle may cause damage to the unit. To help prevent this an "external excessive duty cycle" limiter has been added to protect it from inadvertently operating at an excessive duty cycle with external signals applied via the rear panel connectors. When an excessive duty cycle has been applied, a red LED on the rear panel will light and the 24 volt supply will shut down. Turn the unit power off for a period of 3 to 5 minutes to allow the thermal fuse to cool. Reset the external duty cycle to 1% or less.

When the unit power is restored the LED should be off, if not, remove power long enough to allow additional cooling.

If the red LED stay on after an extended cooling period the sensor may be damaged.

NOTE: If RPR-4000 frequency setting is set to 00.000000Hz and no external gate is applied for a period of time (approximately 20 minutes) the displayed peak detector voltage will gradually drift to a level which will result in an OverVoltage condition and will be indicated by a beeping sound and message on the front panel display. This condition will not harm the instrument, but the operator should be aware. If this condition occurs, it can be terminated by entering a frequency setting with trigger set to INT. or by cycling system power.