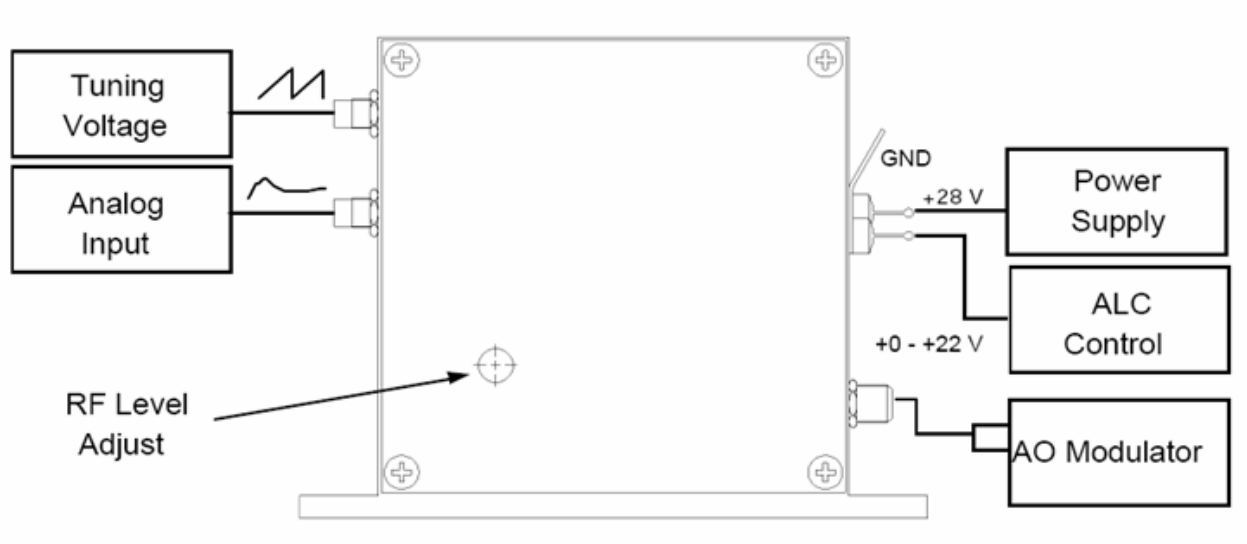
**Crystal Technology, Inc.**
A Siemens Company

# USING THE MODEL 1110AF-AEFO-1.5 RF DRIVER




Operation:

1. Connect RF out of the driver to the input of the AO modulator using a 50Ω coax cable.

2. Connect a +28V DC input to the +Vin connector. (Center conductor is positive.)

3. Use a 50Ω coax connector to connect the modulation input. The input level should be set from +0 to +1.0 Volts for analog modulation.

4. The RF frequency is controlled by the tuning voltage. A +1.5 Volt nominal input corresponds to 75 MHz RF frequency. 150 MHz RF frequency can be set with a +15 Volt nominal tuning voltage. The frequencies can be tuned at a rate of 35 kHz. The nominal input impedance is 10K Ohms.

5. The ALC can be used to control the maximum RF output level. The ALC requires a voltage level between +0V and +24V nominally. If no remote level control is wanted, the ALC can be left unconnected for normal operation. The maximum ALC voltage can be measured by turning the driver on and connecting a voltmeter across the ALC terminals. Make sure no other load is connected to the ALC while making this measurement. Never exceed the maximum ALC voltage, otherwise damage may occur to the driver. The ALC can also be controlled by applying a current sink or by using a potentiometer is set to the maximum RF power setting, otherwise the range of ALC control will be limited by the potentiometer setting.

6. The RF level potentiometer is used for manually setting the maximum RF output power. The factory setting is 1.5 Watts RF at a +1.0 Volt input.

7. The warm-up period for the RF driver is 5 minutes.

8. For optimum setting, the driver and modulator need to be tuned together. Set-up both devices in the laser system and allow the driver to warm-up. After the driver warms up, set the input level to +1.0 Volt. Adjust the Bragg angle and height of the modulator to peak up the diffraction efficiency. Adjust the power level potentiometer to further improve the diffraction efficiency. Longer wavelengths require higher powers to reach peak diffraction efficiency or saturation point. It is possible to overdrive the modulator and cause the diffraction efficiency to drop. Depending on the power level and the wavelength, lowering the RF power could cause an increase in diffraction efficiency. It's always best to find the saturation point of the modulator to ensure optimum performance.