

Model 230 Manual

Introduction:

The Model 230 drive electronics is a high power (75W) AC Coupled amplifier capable of output voltages of 170V Peak-to-Peak. The Model 230 provides an output frequency response of 10KHz-to-230MHz into a 50ohm load.

Technical Overview:

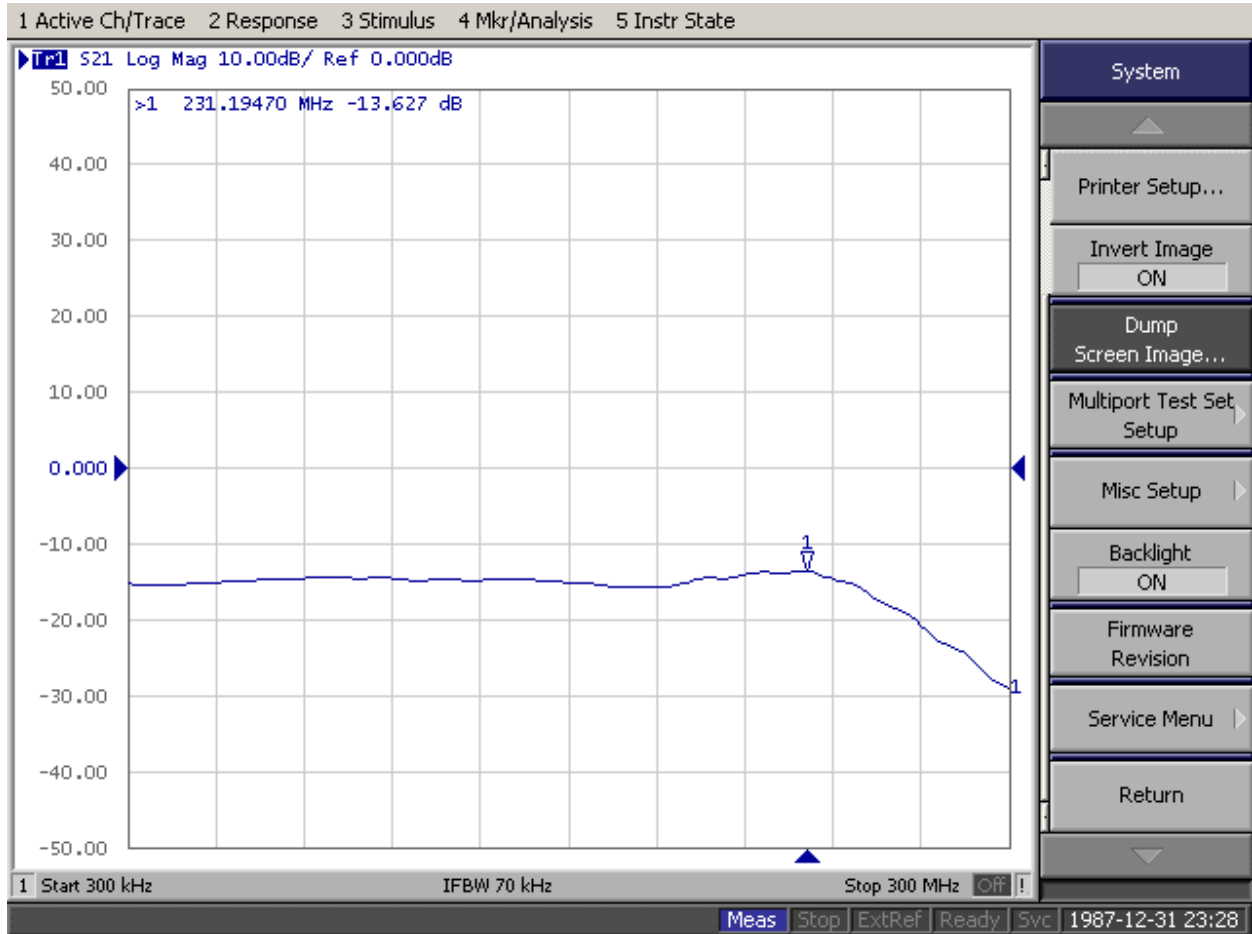
The Model 230 drive electronics is an AC coupled, amplifier. The amplifier is capable of outputting 170volts P-P into a 50-ohm S.E. load. The driver is designed to interface to Conoptics 2-port 50-ohm Electro-Optic Modulators and beam deflectors. The amplifier requires only 626mv (0dbm) P-P input signal into 50 ohms to deliver its maximum output drive. The termination for the transmission line is (a 50-ohm 150W termination). The output signal of the amplifier is delivered to the E.O. Modulator via 50-ohm coax cable. This signal propagates through the modulator and then returns to the load. There is little or no electrical power dissipated in the E.O. Modulator.

As with any AC Coupled amplifier, the output power will be affected by the duty cycle of the input wave form. Max power will be 50% duty cycle inputs. For example, when the duty cycle goes from 10%-to-90%, the output capability of the driver is affected by operating point shifts within the amp. These types of amplifiers are best suited for 50% duty cycle input signals.

Note: If the amplifier is over-driven such that the output state goes into saturation and cut-off, substantial “storage delays” may result. The amplifier may take hundreds of microseconds to recover. Do not attempt to increase the input level beyond 0dbm limit.

Electrical Response

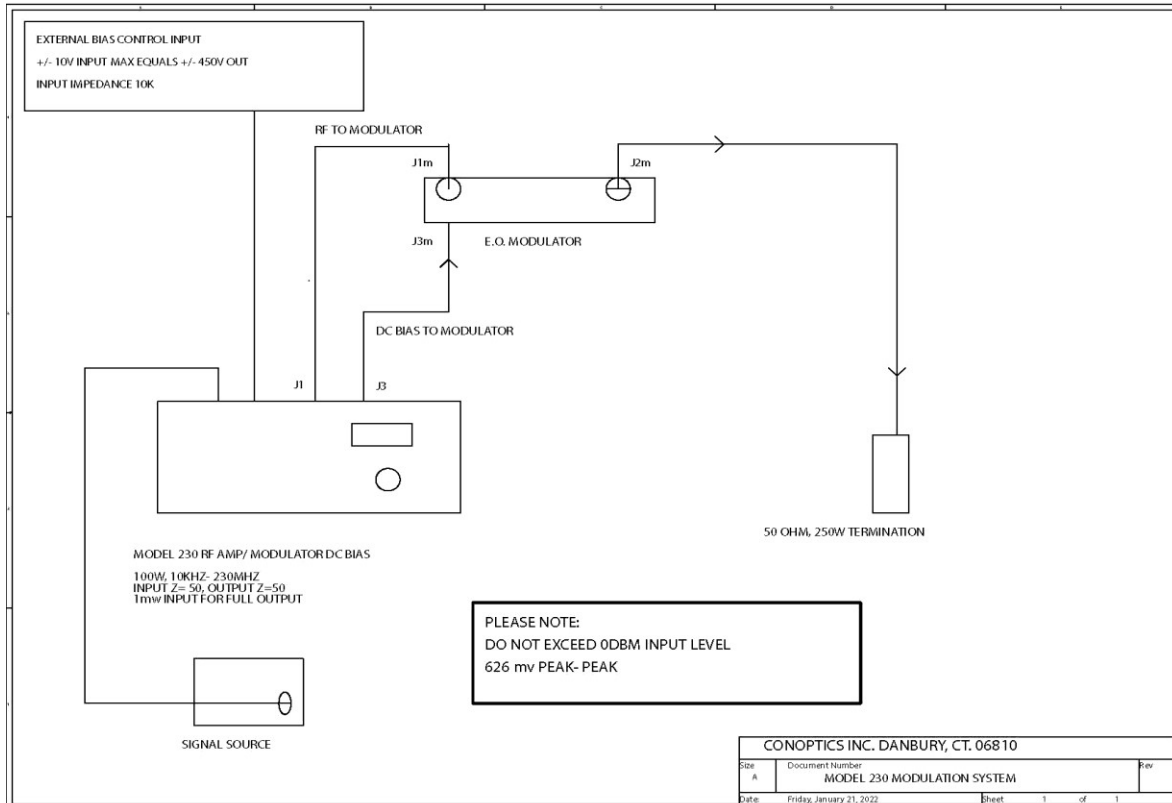
Below is the typical electrical response for the Model 230 driving into a 50ohm load



Note:

- Electrical response of Model 230
- Horizontal Scale 30MHz = per division
- Marker @ 230Mhz

Typical System Configuration



DC Bias Amplifier

A variable DC Bias Voltage Control is included to allow the end user to set the operating point of the Electro-Optic Modulator on the \sin^2 transfer function. This capability is roughly +/- 450VDC and is adjustable by the front panel pot and monitored by the built in LCD Voltage Meter.

The Model 230 allows for “Internal” or “External” BIAS via the back panel switch.



Switch Positions:

1. Front Panel: Allows the operator to control the optical bias of the modulator from the front panel potentiometer.
2. External: Allows the operator to supply a remotely derived DC Voltage to the bias control electronics to operate the bias on the E.O. Modulator a. Range: +/- 10V at input drives bias voltage on cell +/- 430VDC
 - b. Input Impedance: Approx. 100K resistive
 - c. Bandwidth: Designed for DC input only. Do Not Attempt to operate over 5Hz