NEOS TECHNOLOGIES
A Gooch & Housego Company

OPERATING MANUAL
ANALOG DRIVER MODULE

MODEL NUMBER:

21XXX-YAM

DOCUMENT NUMBER: 51A14096A

This Operating Manual is for use with AOM Drivers with model numbers:
XXX = a fixed frequency of between 27 and 300 MHz crystal controlled.
Y = 0.4, 1, or 2 Watts output **A** = Analog Modulation **M** = OEM Module

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INSPECTION PROCEDURE

Examine the shipping carton for damage. If the shipping carton or packing material is damaged it should be kept for the carrier's inspection. Check the contents of the shipment for completeness, mechanical damage, and then test the equipment electronically. Operating procedures are contained in Section VI. Notify the carrier and NEOS Technologies. If the contents are incomplete, or the equipment does not pass the electrical testing please notify NEOS Technologies.

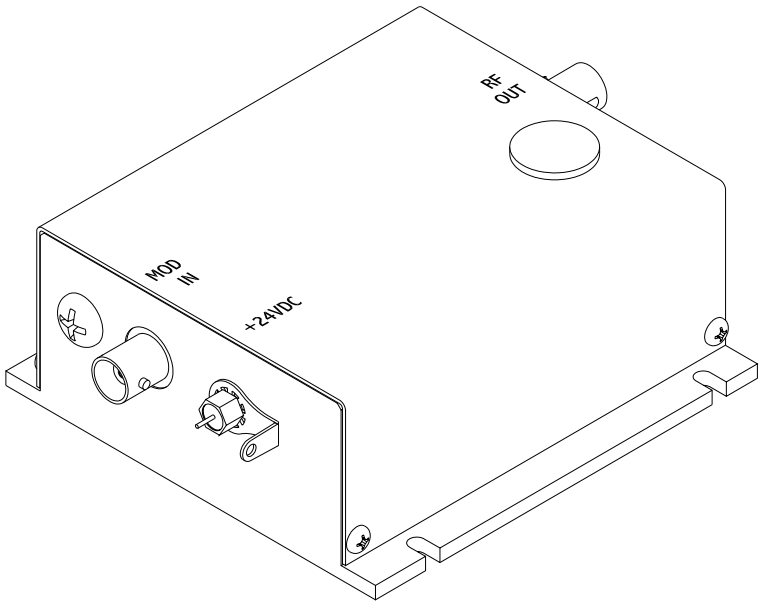
If there is any problem with the use of this equipment, or if the equipment fails to function as expected contact NEOS Technologies, do not try to trouble shoot or repair this equipment. Consult with a NEOS service engineer. If the equipment needs repair or replacement, contact NEOS Technologies, Inc for a Return Authorization Number.

SECTION II.

DESCRIPTION

The model **21XXX-YAM** is a crystal controlled RF frequency generator designed to supply a signal of **XXX** MHz., where **XXX** is a fixed frequency of between 27 and 300 MHz. at up to two Watts maximum output; and is used to drive the NEOS Technologies 15000, 23000, 24000, 26000 free space series and fiber coupled series acousto optic modulators. The standard output power setting **Y** is typically 0.4, 1 or 2 Watts.

The output signal can be modulated by an analog external signal (0 to $\pm$ 1 Volt) applied to Analog Modulation input. The output power is adjustable through the hole in the cover. If purchased with a NEOS AO Modulator, the RF power will be preset for optimum performance. The unit is supplied as a OEM module and requires the customer to supply 24 Volts to power the unit and the unit must be attached to an adequate heatsink.



21XXX-YAM

53B2384 **ANALOG DRIVER MODULE**

SECTION III

SPECIFICATIONS

PARAMETER:		SPECIFICATION:
Output Frequency:		**XXX** MHz Where **XXX** = a fixed frequency of between 27 and 300 MHz
Stability:		± 0.01% Quartz Stabilized
Spurious Levels:		-50 dBc Maximum
Harmonic Distortion:		-15 dBc Maximum
Analog Input:		± 1 Volt into 50 Ohms ± 1 Volt = Full RF Power 0 Volt = Minimum RF Power

Output Frequency	Rise Time P_{RF}: 10 to 90 %	Fall Time P_{RF}: 90 to 10 %	Extinction Ratio Minimum
27 to 50 MHz	< 30 ns typical	< 30 ns	< -50dB
50 to 150 MHz	< 18 ns typical	< 18 ns	< -40dB
150 to 300 MHz	< 8 ns typical	< 8 ns	< -30dB

RF Output Power:	(**Y**)	0.4, 1, or 2 Watts, Nominal Adjustable, Factory Set for Optimum Performance When Paired with a NEOS AO Device
Output Impedance:		50 Ohms Nominal
Supply Voltage:		+ 24 VDC ± 0.5 Volt
Supply Current:		1 Amp Maximum

MAXIMUM RATINGS:

Supply Voltage:	+ 28 Volts
Power Output:	No DC Feedback Allowed
Case Temperature:	+ 55^0 C The Driver Must Be Attached to an Adequate Heatsink.

CONNECTORS & MECHANICAL:

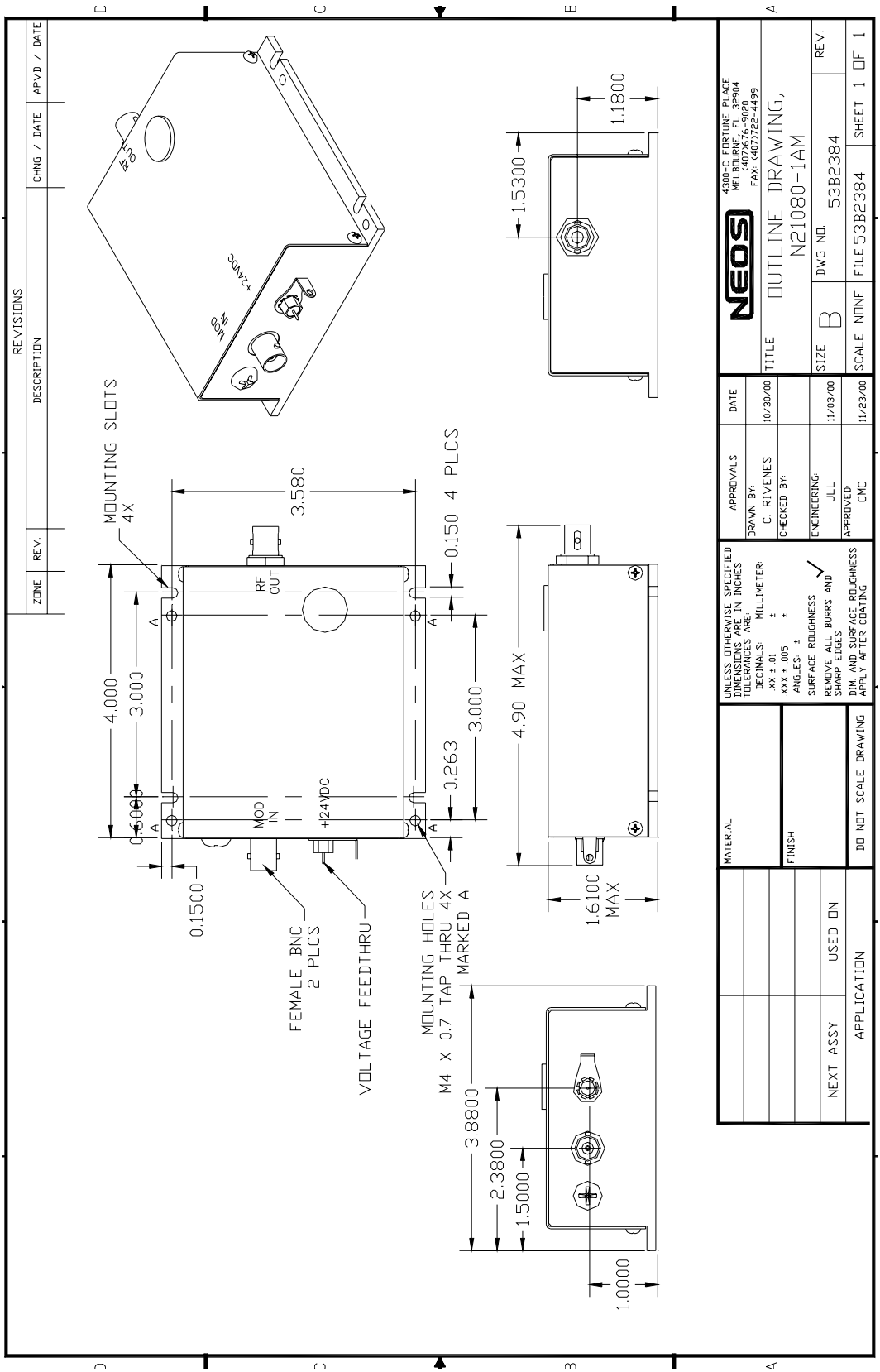
RF Output Connector:		BNC Female
Modulation Input Connector:		BNC Female
Power Supply Connections:	Vcc Return	Solder Post Ground Lug
Physical Size:		4.8" L x 1.61" H x 3.87" W

RELATED DOCUMENTS:

Outline Drawing: 53B2384

SECTION IV

OUTLINE DRAWING



SECTION V

CONTROLS AND CONNECTIONS

A. RF Out BNC - Female

RF Power Output – The output is a factory set, crystal controlled, fixed frequency of between 27 and 300 MHz with an output power set nominally to 0.4, 1, or 2 Watts. When purchased with a NEOS AOM the output power will be set to give optimum performance. It must be terminated with a 50 Ohm load capable of dissipating 2 Watts or an AOM of the same power capability.

B. Modulation Input BNC - Female

The modulation input accepts an analog 0 to ± 1 Volt signal. ± 1 Volt = Full RF Power
0 Volt = Minimum RF Power

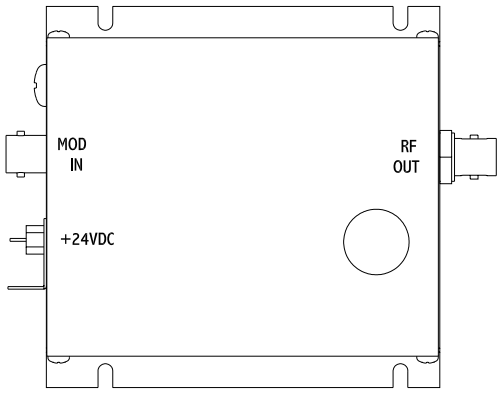
All above signals are referenced to the shield of the BNC connector.

C. Level Adjust

The level adjust is a factory adjustment, but is accessible through the hole in the cover.
Note: Do not adjust the output power above the value specified as maximum for the AOM as this will result in damage to the AOM.

D. Power in Solder Post, and Ground Lug

+24 volts DC @ 1 Amp.



TOP VIEW

SECTION VI.

OPERATING PROCEDURES

TESTING PROCEDURE:

- With the power off, attach a 50 Ohm load capable of dissipating 2 Watts to the "RF Output" of the unit. Apply +24 Volts to the 24V INPUT solder post of the module and return to the Ground Lug. Apply a constant +1 Volt DC to the Modulation Input port through a 50 Ohm cable.

- Measure the frequency and output power and other parameters of the driver. (Note: power is factory pre-set to match the NEOS AO device for optimum performance and is listed on the AO device Acceptance Test Results form. Other parameters are listed on the Acceptance Test Results form included with this driver.)

- Adjust, if necessary, the output power to the power level necessary for the AO device to be driven for optimum performance. The adjustment is accessible through the hole in the cover.
  Warning: The RF power should never exceed that specified for the AO Modulator driven. See the AO device manual for power limitations and other warnings. If damage results due to overpowering the AOM, the warranty will be void.

- Apply a 0 to + 1 Volt modulating signal to the Modulation Input.
  Measure the RF output for specifications for this driver as listed in the Acceptance Test Results form included with this driver.

- The driver has been designed and has been tested to meet the specification. Notify NEOS Technologies, Inc if the driver does not pass the electrical testing.

OPERATION PROCEDURE:

- The driver should be pre-set to output RF power at the required power level for the AOM.
- With the power off, attach the NEOS 15000, 23000, 24000, or 26000 free space or fiber coupled acousto optic modulator or other acousto optic modulator device to the driver with a 50 Ohm cable.
- Apply +24 Volts to the 24V INPUT solder post of the module and return to the Ground Lug.
- Apply a constant +1 Volt DC to the Modulation Input port through a 50 Ohm cable.
- **Follow the instructions in the AO Modulator manual to align and adjust the optical modulator, as required for optimum performance**.
- Apply a 0 to + 1 Volt modulating signal to the Modulation Input as desired.