

NEOS TECHNOLOGIES

A Gooch & Housego Company

OPERATING MANUAL
DIGITAL DRIVER MODULE

MODEL NUMBER:

21XXX-YDM

DOCUMENT NUMBER: 51A14095A

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 **D** = Digital Modulation **M** = OEM Module

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SECTION I

INSPECTION PROCEDURE

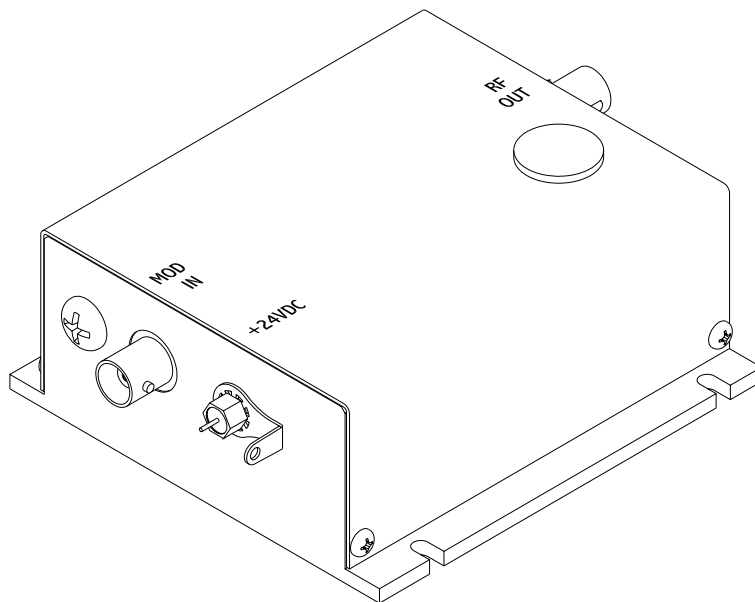
Examine the shipping carton for damage. If the shipping carton or packing material is damaged it should be kept for the carrier's inspection. Check the contents of the shipment for completeness, mechanical damage, and then test the equipment electronically. Operating procedures are contained in Section V. 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-YDM** 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 a Digital TTL external signal, applied to Digital 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-YDM

53B2384

DIGITAL DRIVER MODULE

SECTION III
SPECIFICATIONS

PARAMETER:	SPECIFICATION:
Output Frequency:	XXX MHz Where XXX = a fixed frequency of between 27 and 300 MHz
Stability:	$\pm 0.01\%$ Quartz Stabilized
Spurious Levels:	-50 dBc Maximum
Harmonic Distortion:	-15 dBc Maximum
Digital Input:	TTL Levels TTL HIGH = Full RF Power TTL LOW = Minimum RF Power 0 Volt = Minimum RF Power

Output Frequency	Rise Time	Fall Time	Extinction Ratio
	P_{RF} : 10 to 90 %	P_{RF} : 90 to 10 %	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:	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 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

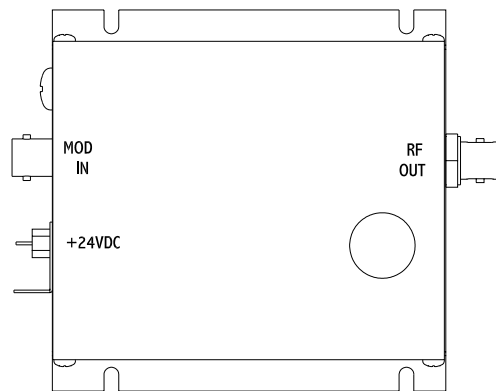
The modulation input accepts TTL level signal. A TTL HIGH = Full RF Power and a TTL LOW = Minimum RF Power.
All above signals are referenced to the shield of the BNC connector.

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 V

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 TTL HI 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 TTL 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 TTL HI 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 TTL signal to the Modulation Input as desired.