

Gooch & Housego



AOM Driver 3307 Series

1 to 4 Watt RF Drivers for
Acousto-Optic Modulators

The 3307 Series RF driver provides up to 4 Watts output power. Various types cover a frequency range of 80 to 350 MHz.

The maximum RF output power is adjustable by an internal potentiometer. The driver is available in either analogue or digital modulation control. The analogue modulation voltage controls the output power from 0 to 100% of the adjusted maximum power. The digital modulation control signal can switch on and off the RF power.

The driver can be operated with modulation frequencies (analogue and digital) up to 25% of the carrier frequency and 50 MHz maximum at the higher carrier frequencies.

Optimum EMC shielding and mechanical protection is achieved by an aluminium casing. The base plate serves for mounting and heat dissipation purposes.

Many options are available with this driver including frequency tuning, automatic level control (ALC) and an external amplifier that can boost output power up to 20 Watts.

Key Features:

- Frequency range 80 to 350 MHz
- RF output power up to 4 Watt
- RF on/off ratio ≥ 35 dB (Digital Modulation)
- RF on/off ratio ≥ 35 dB (Analogue Modulation)
- Constant output power design
- Models with a modulation frequency up to 50 MHz available
- Conductive cooling through base plate
- Compact casing

Applications:

- Fast modulation components for extra cavity applications, e. g. laser projection systems
- Frequency shifting

Technical Data

Supply Voltage	+24V DC, +28V DC
Supply Current	550 mA nom. with Pout = 0.35-1.5W@24V 550 mA nom. with Pout = 0.35-1.5W@28V 700 mA nom. with Pout = 2.0-4.0W@24V 700 mA nom. with Pout = 2.0-3.0W@28V ^(VI) 2000 mA nom. with Pout = 7.0W@24V ^(I) 2700 mA nom. with Pout = 20W@24V ^(I)
Output Impedance	50 Ω (nominal)
Maximum RF Power (adjustable)	< 0.1 W ... > Pout
Frequency Accuracy	$\pm 0.1\%$
Harmonic Distortion^(II)	≤ -20 dBc
Analogue modulation	
Impedance	50 Ω (nominal)
Voltage range @ 50 Ω	0 ... +1 V ^(III)
RF ON / OFF ratio	≥ 35 dB ^(IV)
Digital modulation	
Impedance	50 Ω (nominal)
Level	Standard TTL ^(V)
RF ON / OFF ratio	≥ 35 dB
RF Output Frequencies^(VII)	80, 110, 150, 200, 260 & 350 MHz
RF Rise/Fall Times	12 nsec @ 80 MHz
(Rise = 10% to 90%)	9 nsec @ 110 MHz
(Fall = 90% to 10%)	7 nsec @ 150 MHz 5 nsec @ 200 MHz 4 nsec @ 260 MHz 4 nsec @ 350 MHz

^(I) 7W and 20W versions use an external amplifier.

^(II) Into 50 Ω load

^(III) Part numbers -52 and -58 are ≤ -30 dBc

^(IV) Part number -40 is ≥ 42 dB

^(V) Part numbers -12, -43 are (OFF: $< +0.3V$, ON: +1.0V)

^(VI) Part numbers -03, -18, -22, -31, -44, -69: 550mA nom.

^(VII) Other custom frequencies are available

Connectors

RF output connector	SMA (female)^(I)
Modulation connector	SMB (male) ^(II)
Frequency Tuning connector	SMC (male)
Reference Frequency connector	SMC (male)
ALC Connector	
Input	Solder terminal (filtered feed-thru)
Ground	Solder lug
Power Supply connector	
Input	Solder terminal (filtered feed-thru) ^(III)
Ground	Solder lug ^(III)

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As part of our policy of continuous product improvement we reserve the right to change specifications at any time.
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- (i) Part number -12 & -43 have SMB (male)
 - (ii) Part numbers -12, -29 & -43 have SMA (female)
 - (iii) Part numbers -45 & -50 have Mini-Universal Mate-N-Lok connector
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Frequency Tuning

Input Impedance	1 kΩ nominal
FM Bandwidth (3 dB)	90 kHz
Frequency Range	Input Voltage
50 – 100 MHz	+1.5 - +15 V nominal ⁽ⁱ⁾
75 – 150 MHz	+1.5 - +15 V nominal ⁽ⁱⁱ⁾
150 – 280 MHz	+2.0 - +15 V nominal ⁽ⁱⁱⁱ⁾
200 – 380 MHz	+1.0 - +15 V nominal ^(iv)
270 – 430 MHz	+2.5 - +12 V nominal ^(v)

- (i) Part numbers -04, -25 and -68
- (ii) Part numbers -23, -49 and -59
- (iii) Part numbers -17, -28 and -48
- (iv) Part numbers -62 and -63
- (v) Part number -70

ALC (Auxiliary Level Control)

Input Impedance	1 kΩ nominal⁽ⁱ⁾
ALC Bandwidth	35 kHz nominal
RF Output (0 W – Full power)	ALC Voltage level
+24 V (Vcc)	0 – +21 V nominal
+28 V (Vcc)	0 – +25 V nominal
+28 V (Vcc)	0 – +5 V nominal ⁽ⁱⁱ⁾
200 – 380 MHz	0 – +10 V nominal ⁽ⁱⁱⁱ⁾
270 – 430 MHz	

- (i) Part numbers -03, -10, -21, -22, -31, -38, -43, -69: 10K Ω
- (ii) Part numbers -03, -31, -38 and -43
- (iii) Part numbers -10, -21, -22 and -69

Reference Frequency

Output Reference Frequency	Fc divided by 256⁽ⁱ⁾
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- (i) Part number -21

Cooling, Dimensions, Weight

Cooling	Conduction
Pout	Base plate should be attached to suitable heat sink capable of dissipating:
1.0 W - 1.5 W	15 W
2.5 W - 3.0 W	20 W
4.0 W	22 W
Dimensions inches [mm]	
L x W x H	4 x 1.12 x 3.15 [102 x 29 x 80]
Weight lbs [kg]	0.53 [0.24] (nominal)

Environmental Conditions

Warm-up Time	5 minutes (nominal)
Base Plate Temperature	0° C to +60° C For optimum output power stability constant base plate temperature should be provided
Storage Temperature	-25°C to +85°C (non condensing)

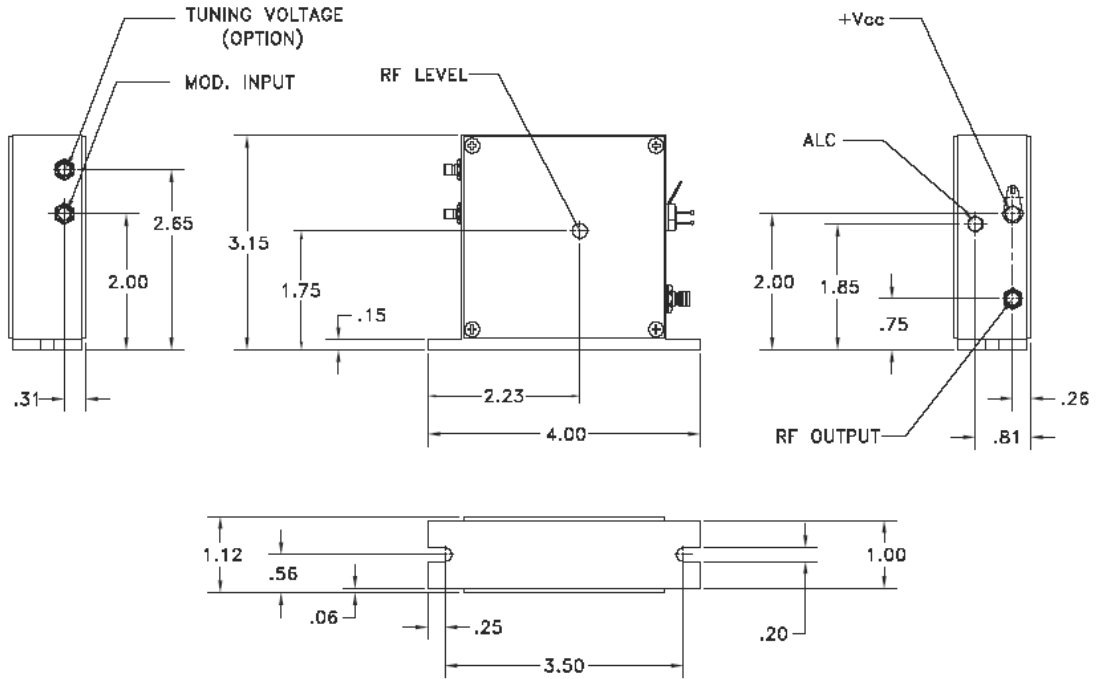
Absolute Maximum Ratings

Supply Voltage	+28 VDC
Analogue Modulation	-3.0 V to +3.0 V
Digital Modulation	-4.3 V to +4.3 V
Operating Temperature	+65°C (base plate temperature)

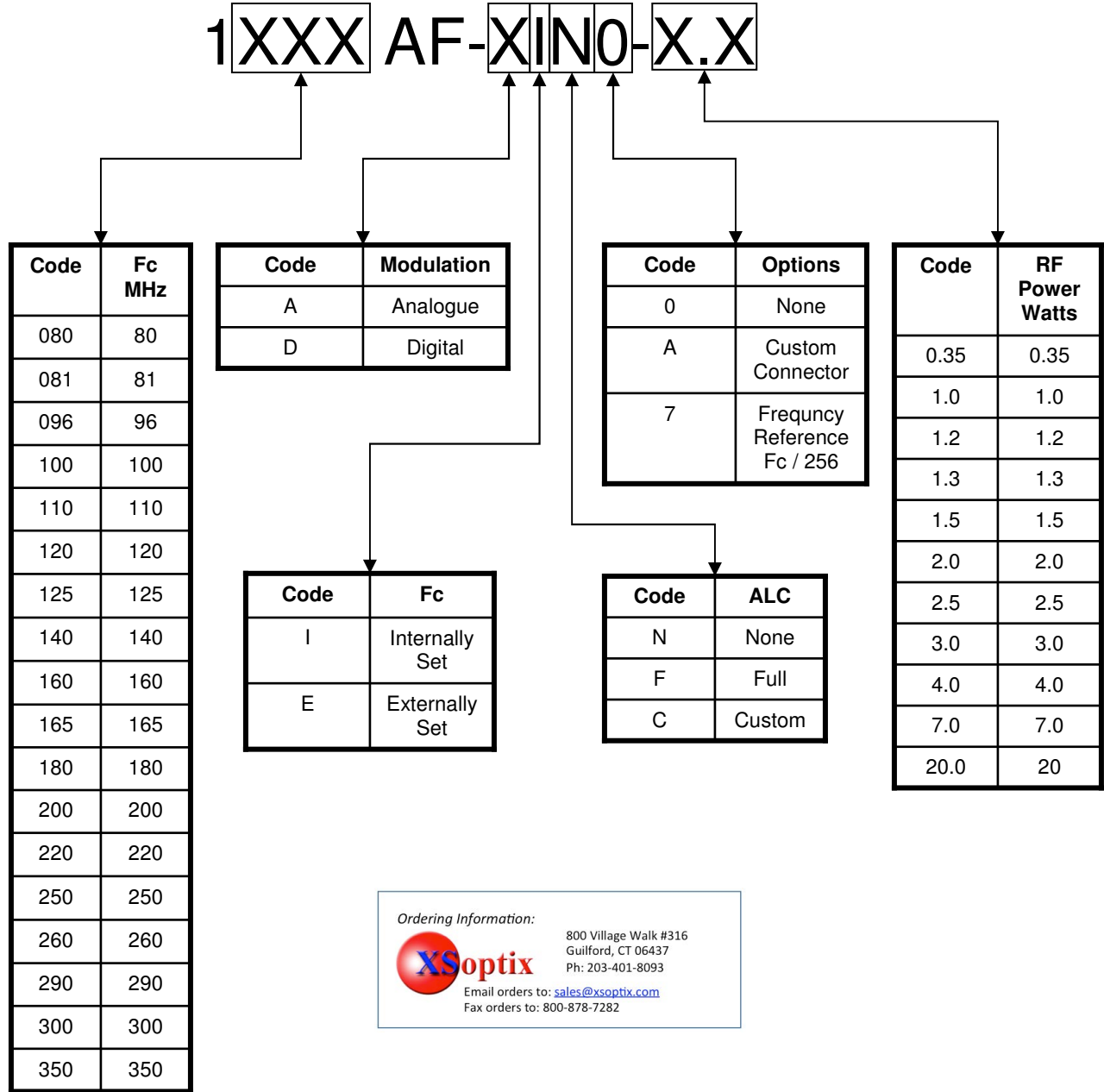
Quality Standards

EU 2002/95/EC (RoHS)	Compliant
Burn-in	12 Hours min @ +25° C and Pout

Outline Drawing:
(Dimensions in inches)



Variant List / Ordering Codes



Other Frequencies and customized versions available upon request.