



### HIGH PERFORMANCE LASER RANGEFINDER RECEIVER WITH RANGE PROCESSOR

- HIGH SENSITIVITY DOWN TO 3 nW
- FAST RECOVERY FROM OVERLOAD
- OPTIMIZED FOR MULTIPLE TARGETS
- THERMO-ELECTRICALLY COOLED DETECTOR
- TIME PROGRAMMED GAIN WITH NOISE TRACKING THRESHOLD
- HIGH SPEED RANGE COUNTER WITH RANGE WALK CORRECTION TO 1 m RMS
- DIGITALLY ADJUSTABLE APD BIAS, RANGE GATES AND FALSE ALARM RATE
- BUILT-IN HV BIAS SUPPLY FOR APD DETECTOR  
NO NEGATIVE SUPPLY REQUIRED



#### DESCRIPTION:

The **7558A Series** Rangefinder/Processor assembly comprises a high-performance Model 758A.1 receiver with compact support electronics to provide correct range data to a mother system. The serial range data output is calibrated using AMI's patented technology to mitigate the effects of range errors from various sources including walk due to return signal amplitude variations. Exceptional sensitivity allows the use of low power lasers, or alternatively, long range operation. The module provides high voltage bias, time programmed gain with noise tracking threshold, first/last pulse selection, range gating, a cooler controller and heat sink, as well as several user-controlled options via the serial interface. The compact layout allows positioning at the optics for minimum overall system size. Custom options and optimization are available.

#### SPECIFICATIONS:

##### Detectors/Sensitivity

(50% Pd; 6 ns pulse; 1550 nm; 0.1% FAR; TEC set for 15°C)

Detector type: InGaAs APD

MODEL	DET DIA	TYP	MAX
7558A-03	80 $\mu$ m	3 nW	6 nW
7558A-04	200 $\mu$ m	6 nW	9 nW

At 1.06  $\mu$ m, multiply sensitivity value by 2.

##### Multiple Target Resolution

Large Signal	(10 $\mu$ W)	20 m typical at 50 m
Small Signal	(1 $\mu$ W)	10 m typical at 10 km

##### Dynamic Range

10<sup>7</sup>:1

##### Min/Max Range

50 m to 65 km

##### Range

<1 m RMS typical, 2 m RMS max. – digitally corrects for fixed-threshold receiver range walk as a function of signal amplitude

##### Accuracy

##### Range Gate

Digitally adjustable via serial interface

##### FAR

False alarm rate adjustable via serial interface.

##### APD Bias

Detector bias adjustable via serial interface

##### First/Last/Strongest

First, last or strongest pulse range logic selection via serial interface

##### TPG

Receiver is held in low gain until a start pulse is detected, after which the receiver time programmed gain is initiated

##### Start Pulse

Electrically or optically injected

##### Serial I/O

Serial input – RS422  
Optional LVDS  
Serial output – RS422  
Optional LVDS

##### Power

+5 V at 450 mA (excluding TEC)  
TEC current <300 mA  
TEC cool down rate: 10°C/sec  
Reduced power mode when idle

##### Temperature

Operating -40° to +71°C  
Storage -40° to +85°C

##### Size Weight

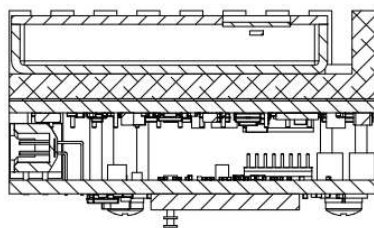
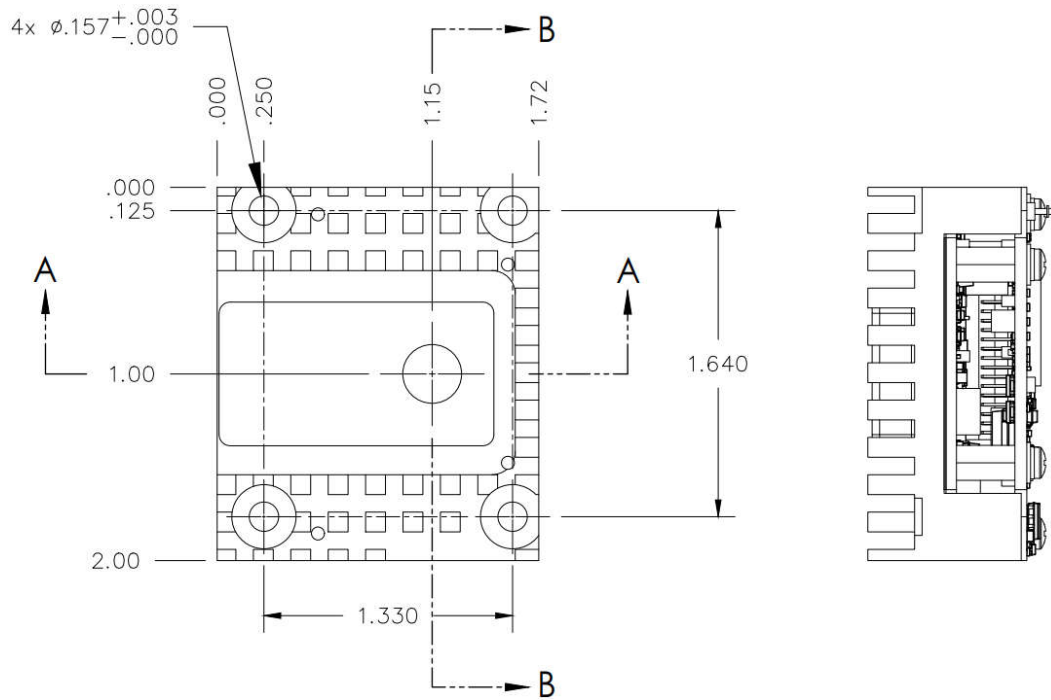
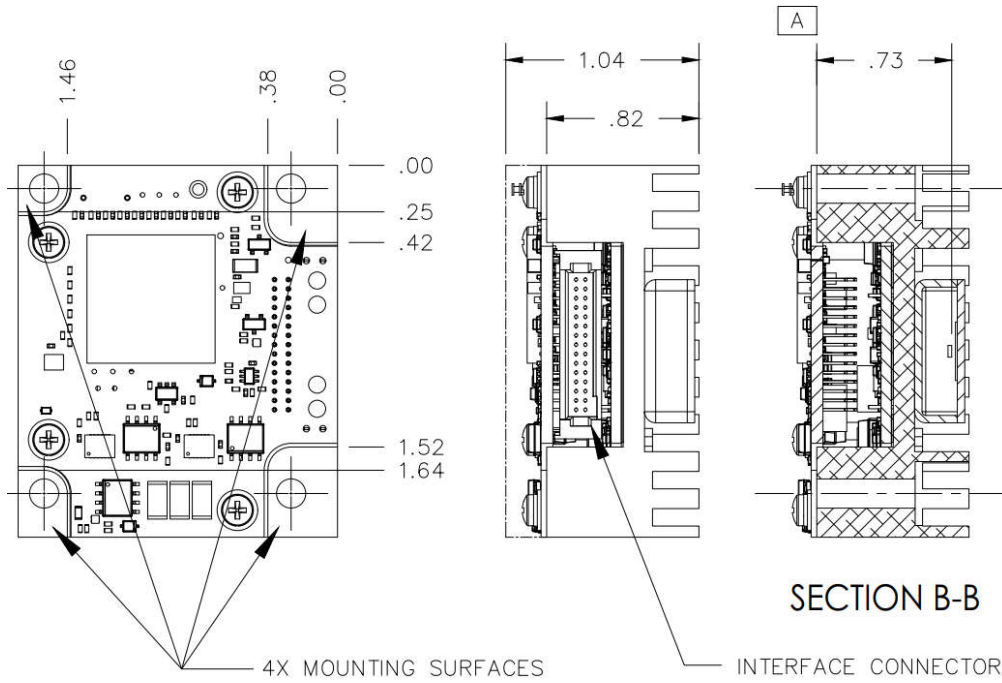
1.72" x 2.0" x 1.04"  
3.2 oz



In the event this commodity will be transferred to a "foreign person" as defined in 22 CFR 120.16, either outside or within the United States, a validated US State Department license is required.

Specifications subject to change without notice

U.S. Patent No. 8,619,239



SECTION A-A

Dimensions are in inches