

DESCRIPTION

This class AB GaN module is designed for both military and commercial applications. It is capable of supporting any signal type and modulation format, including but not limited to 3-4G telecom, WLAN, OFDM, DVB, and CW/AM/FM. The latest device technologies and design methods are employed to offer high power density, efficiency, and linearity in a small, lightweight package.



FEATURES

- Over / Under / Reverse Voltage Protection
- Over-Temperature Protection
- Optional Heatsink
- Tx / Rx Status Monitor
- Forward Power Measurement
- Temp. Monitor Output
- Manual or Automatic Tx/Rx Switching Available

Specifications subject to change without notice. Typical performance at VDC at 25°C in a 50Ω system

TX SPECIFICATIONS (PER CHANNEL)				
PARAMETER	MIN	TYP.	MAX	UNIT
Operating Frequency	4400		5000	MHz
PSat Power Output		+44.0		dBm
Gain		25.0		dB
Gain Flatness		1.0		± dB
Input Return Loss	-15			dB
Operating Voltage	+12		+28	VDC
Tx / Rx Switching Time		1.0	2.0	uS

RX SPECIFICATIONS (PER CHANNEL)				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		+5.0		dBm
Gain		10.0		dB
Gain Flatness			1.0	± dB
Noise Figure		2.5		dB
OIP3		+15.0		dBm
Input Return Loss	-10			dB
Current Draw		100.0		mA

MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	5.3 x 3.25 x 0.6	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	21 Pin Micro-D	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	13	oz.
Weight With Heatsink	35	oz.

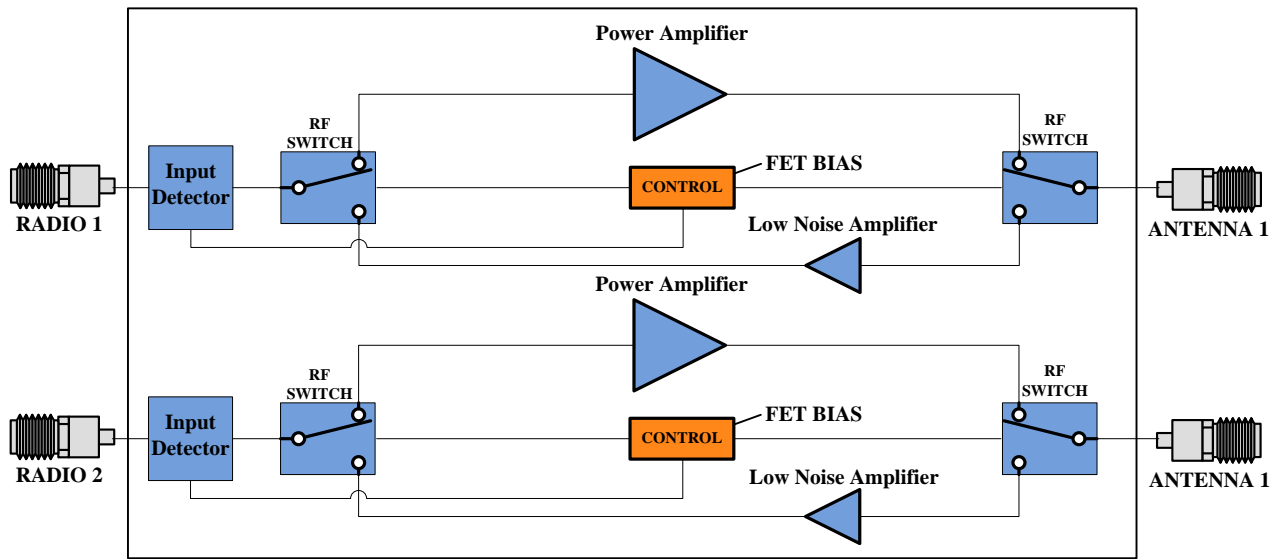
ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	+85	°C
Storage Temp Range	-60	+100	°C
Humidity Range	0-95		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input (Per Channel)	+17		dBm
PA Baseplate Shutoff Temperature	+85		°C

DC / CONTROL PINS		
AMPLIFIER CONNECTOR TYPE:		21 PIN MICRO-D FEMALE
TRIAD CABLE PART NUMBER:		CBL45
PIN LABEL	NAME	DESCRIPTION
1-3,12-13	+VDC	Supply Voltage - Range Specified in Datasheet
4	FWD DET	Tx Amp RMS Power Detector
5	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) * 100
6	RAD DET	Radio Input RMS Power Detector
9-11,20-21	GND	+VDC Supply Return
7	Status	BDA Status - TTL High = Normal Operation, TTL Low = Error Condition
8	Tx/Rx	TTL High or No Connection = Tx, TTL Low = Rx
19	SGND	Signal Ground
14-18	Reserved	Reserved for future use

802-11G (20 MHz BW) DATA RATE VS. OUTPUT POWER (PER CHANNEL)			
OFDM MODULATION	DATA RATE	POUT (W) MIN.	EVM
64QAM	54 Mbps	5	≤ -27 dB
16QAM	36 Mbps	10	≤ -21 dB
QPSK	12 Mbps	16	≤ -15 dB
BPSK	9 Mbps	20	≤ -7 dB

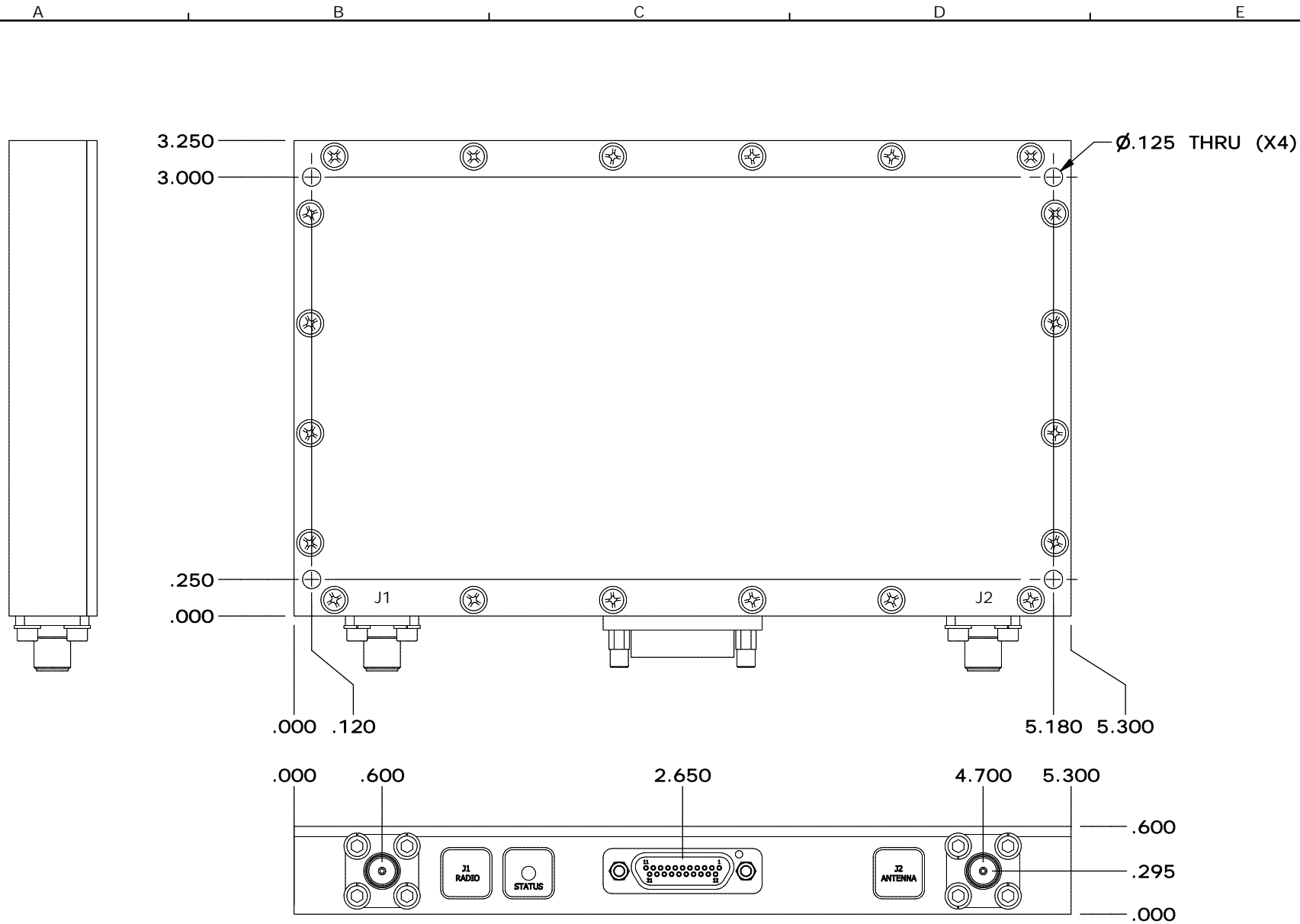
See our [application note](#) that describes how this table was calculated and provides notes on in-system performance

High-Level Block Diagram



Ordering Guide – Configuration Information		
Model Number	Amplifier Option	Heat Sink Option
TTRMXXXXD - XXX - XXX		

Amplifier Options		Heat Sink Options	
Suffix	Description	Suffix	Description
D01	Automatic Tx/Rx Switching	(none)	No Heat Sink Included
D02	Manual Tx/Rx Switching	HS	Standard Heat Sink
DXX	Custom Amplifier Configuration (issued by Triad upon customer request)	HSF	Heat Sink with Integrated Cooling Fan
		HSX	Custom Heat Sink Configuration



DRAWN	scopp	1/31/2018
DESIGNED	DMC	5/11/2017
CHECKED		
ENG APPROVED		
MFG APPROVED		



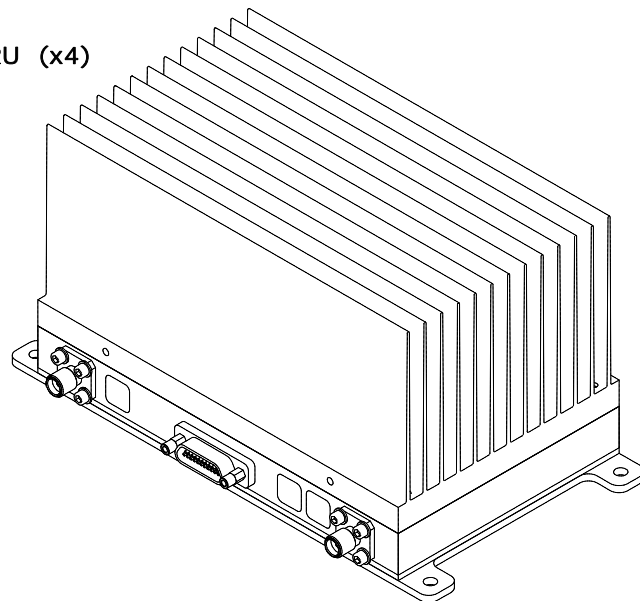
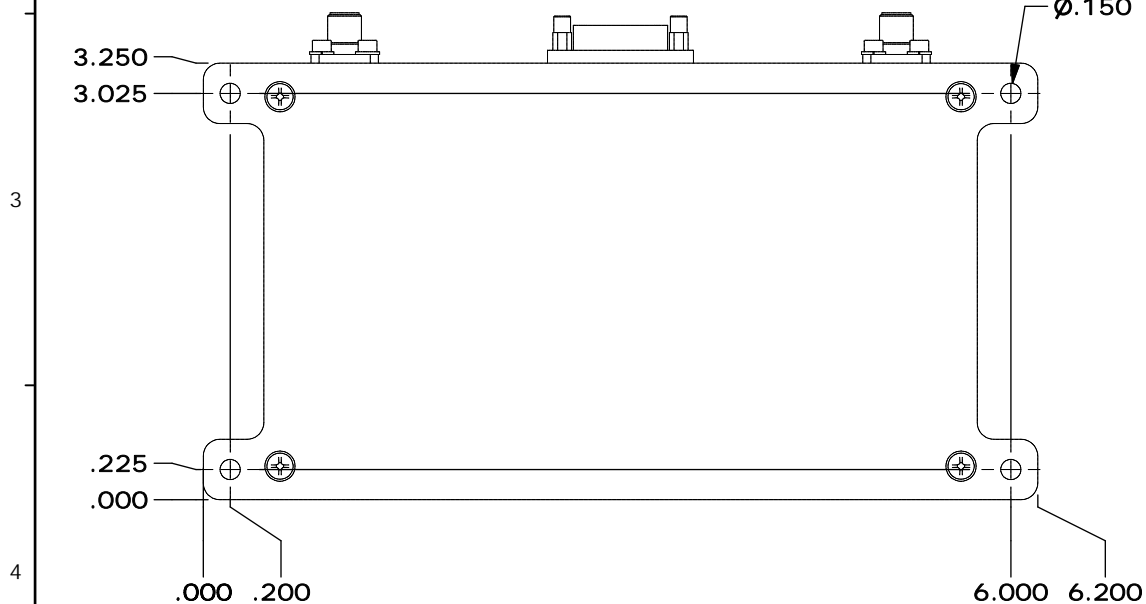
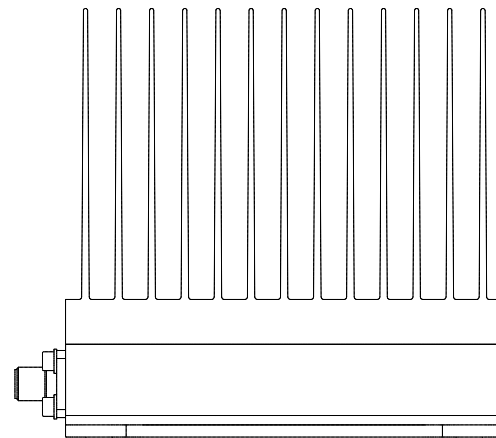
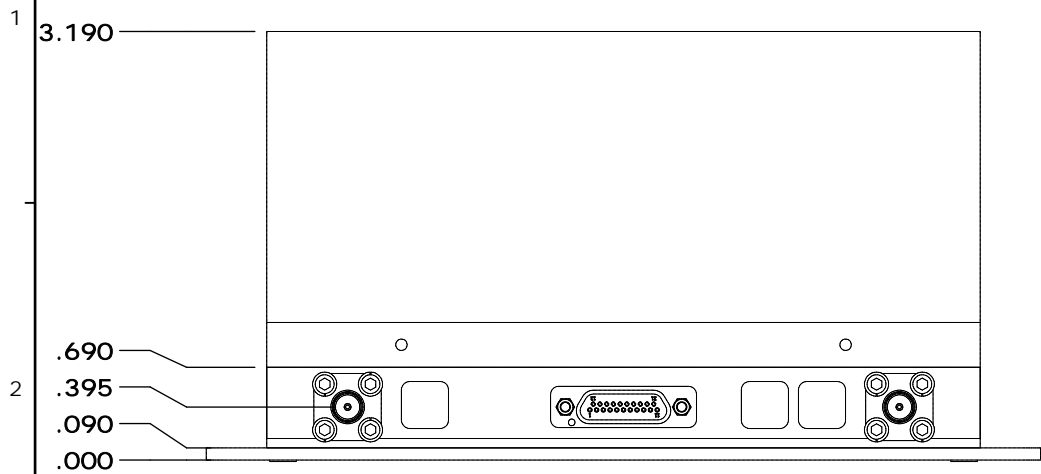
11 HARTS LANE SUITE 1
EAST BRUNSWICK, NJ 08816
855- 558- 1001

HOUSING OUTLINE DRAWING 170

DIMENSIONS ARE IN INCHES
UNLESS SPECIFIED OTHERWISE
TOLERANCES
DECIMALS FRACTIONS ANGLES
XX ±.01 ± 1/32 ± 2°
.XXX ±.005

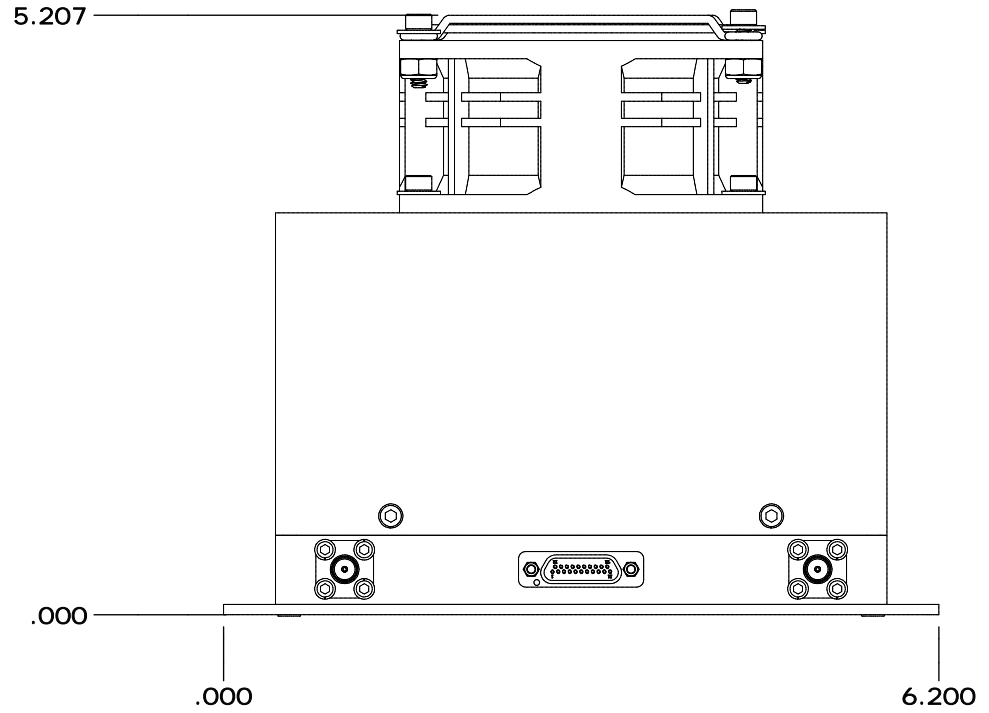
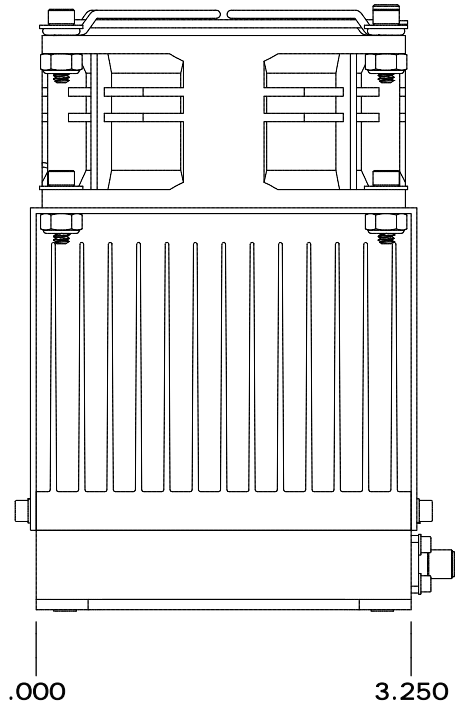
SIZE	DWG NO.	REV
A	OL_170	1
SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 4

HEATSINK



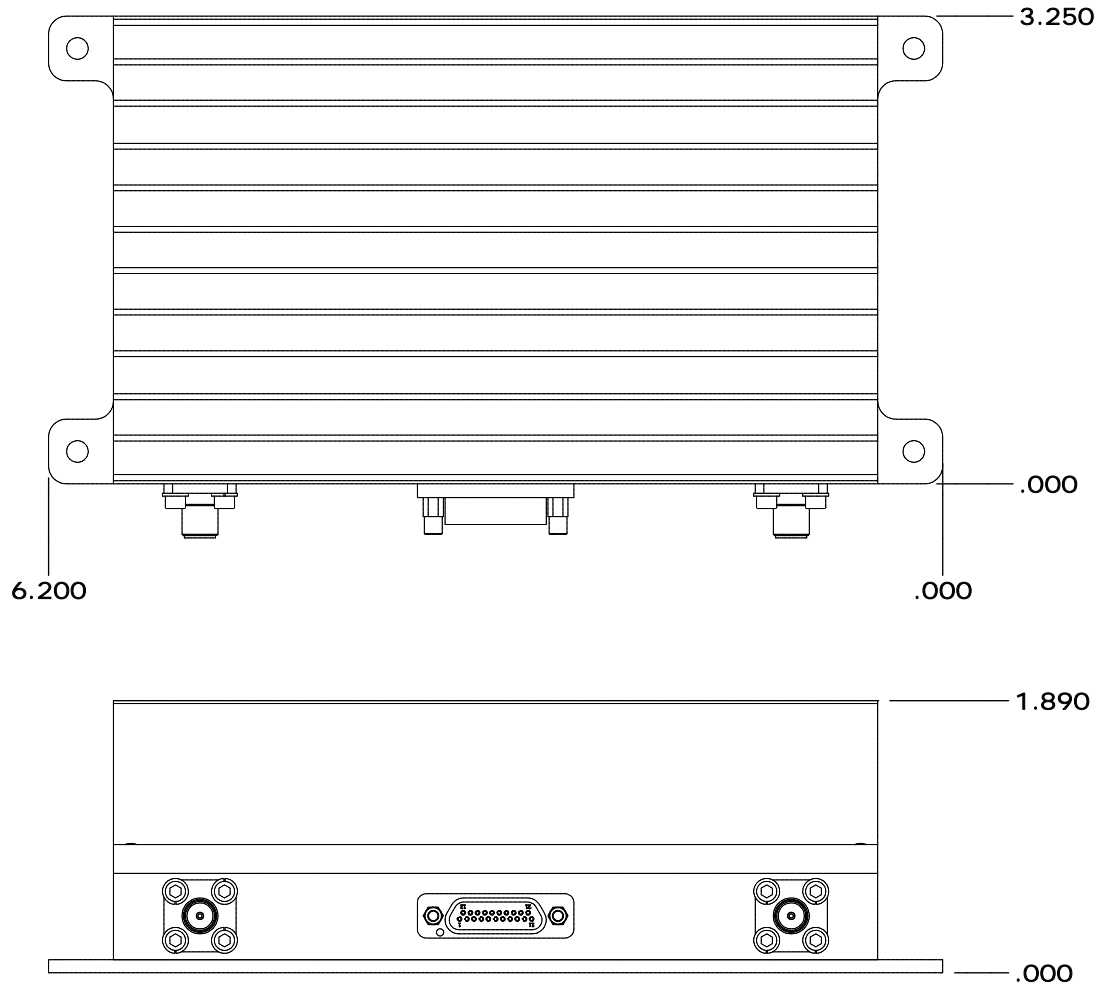
DRAWN	scopp	1/31/2018	HOUSING OUTLINE DRAWING 170		
DESIGNED	DMC	5/11/2017	SIZE	DWG NO.	REV
CHECKED			A	OL_170	1
ENG APPROVED			SCALE: NONE	CAGE CODE	SHEET 2 OF 4
MFG APPROVED				67DZ3	

HEATSINK WITH FAN OPTION



DRAWN	scopp	1/31/2018	HOUSING OUTLINE DRAWING 170		
DESIGNED	DMC	5/11/2017	SIZE	DWG NO.	REV
CHECKED			A	OL_170	1
ENG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 4
MFG APPROVED					

LOW PROFILE OPTION
CONFIRM USABILITY WITH TRIAD BEFORE ORDERING



DRAWN	scopp	1/31/2018	HOUSING OUTLINE DRAWING 170		
DESIGNED	DMC	5/11/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED			A	OL_170	1
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 4 OF 4