

DESCRIPTION

This class AB LDMOS 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
 Optional Heatsink
 Temp. Monitor Output

High Speed Tx/Rx Switching Control
 Manual or Automatic Tx/Rx Switching Available
 Manual Gain Control

Specifications subject to change without notice. Typical performance at +28VDC at 25°C in a 50Ω system

Tx SPECIFICATIONS				
PARAMETER	MIN	TYP.	MAX	UNIT
Operating Frequency	2300		2500	MHz
PSat Power Output	+45.0	+46.0		dBm
Gain	25.0	27.0		dB
Gain Flatness		1.0	1.5	± dB
Input Return Loss	-16	-18		dB
Operating Voltage	+24	+28	+30	VDC
Current Draw		2.5	4.9	A
Tx / Rx Switching Time		1.0	2.0	uS

Rx SPECIFICATIONS				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		+5.0		dBm
Gain		11.0		dB
Gain Flatness		0.5	1.3	± dB
Noise Figure		4.0		dB
OIP3		+15.0		dBm
Input Return Loss	-8	-10		dB
Current Draw		100.0		mA

MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	5.3 x 3.25 x 0.57	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	15 Pin Micro-D	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	13	oz.
Weight With Heatsink	35	oz.

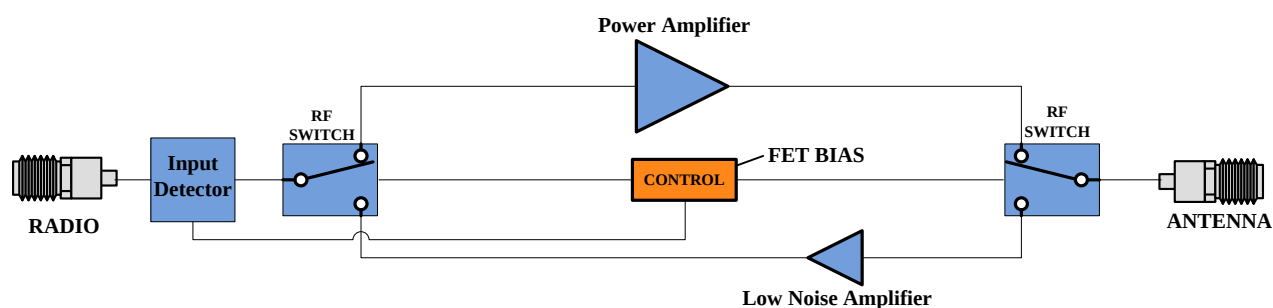
ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temperature (Housing Temp.)	-40	+85	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	22		dBm
PA Baseplate Shutoff Temperature	+90		°C

INPUT/OUTPUT PINS				
AMPLIFIER CONNECTOR TYPE:		15 PIN MICRO-D FEMALE		
TRIAD CABLE PART NUMBER:		CBL20		
PIN LABEL	NAME	DESCRIPTION	TYPE	LEVEL
1-4	+VDC	Supply Voltage - Range Specified in Datasheet	Power	--
5	Sig. GND	Return for all Signal and CTRL Pins	--	--
6	Gain CTRL	High=No Gain Change, Low=Gain Reduced by 3dB	Input	3.3V TTL
7	Status	TTL Lo = Internal Fault	Output	3.3V TTL
8	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) *100	Output	Analog
9-12	GND	+VDC Supply Return	Power	--
13-14	N/C	No Connection	--	--
15	TX/RX CTRL	Hi = TX, Lo = RX	Input	3.3V TTL

802-11G (20 MHz BW) DATA RATE VS. OUTPUT POWER			
OFDM MODULATION	DATA RATE	POUT (W) MIN.	EVM
64QAM	54 Mbps	10	≤ -27 dB
16QAM	36 Mbps	18	≤ -21 dB
QPSK	12 Mbps	20	≤ -15 dB
BPSK	9 Mbps	32	≤ -7 dB

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

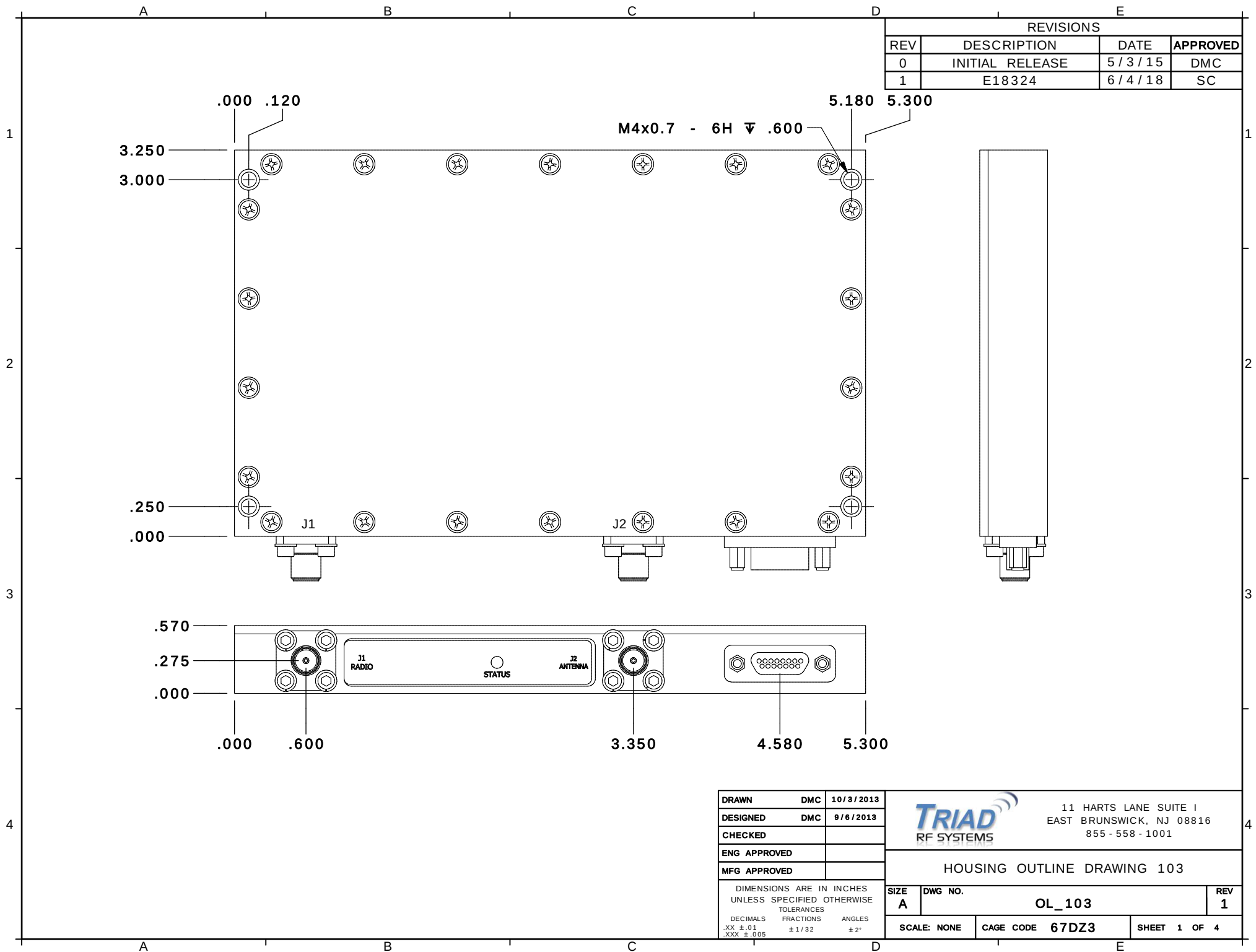
High-Level Block Diagram



Ordering Guide – Configuration Information

Model Number	Amplifier Option	Heat Sink Option
TTRMXXXX	- 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



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	5 / 3 / 15	DMC
1	E18324	6 / 4 / 18	SC

DRAWN	DMC	10 / 3 / 2013
DESIGNED	DMC	9 / 6 / 2013
CHECKED		
ENG APPROVED		
MFG APPROVED		

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

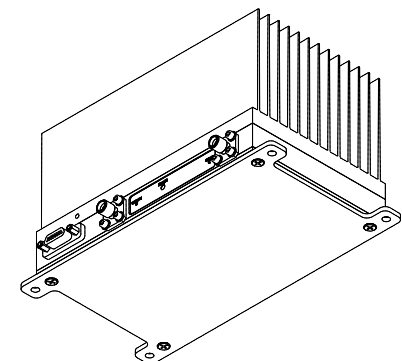
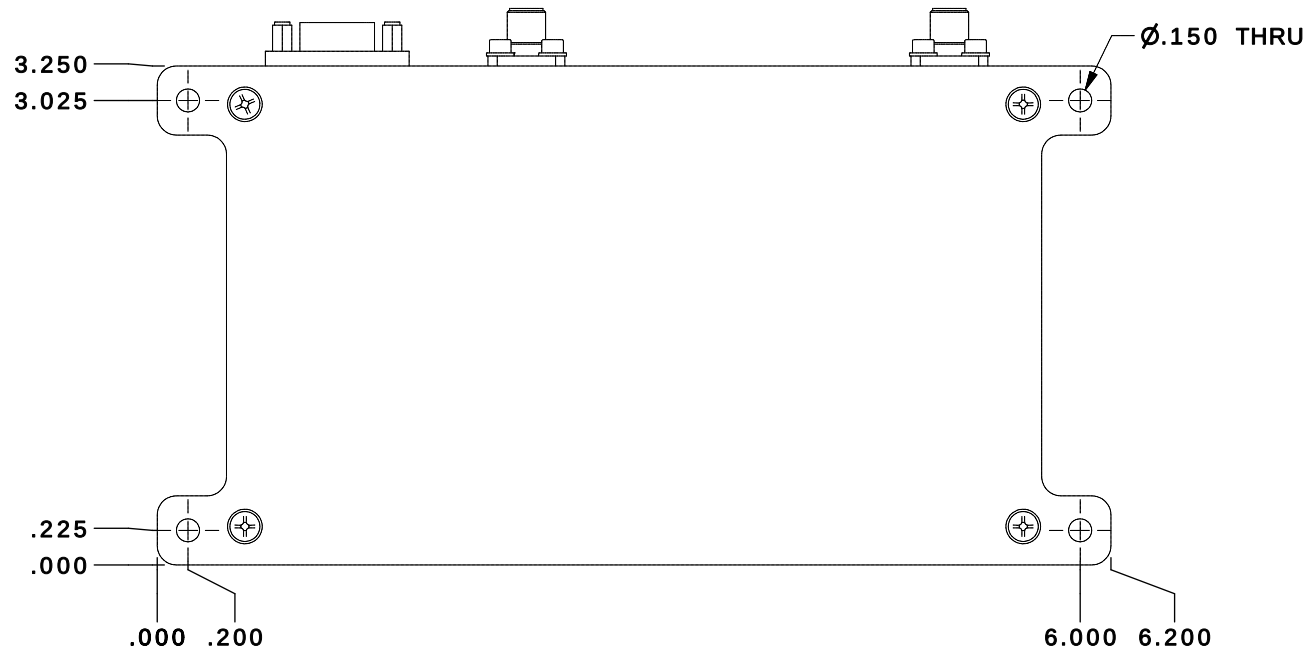
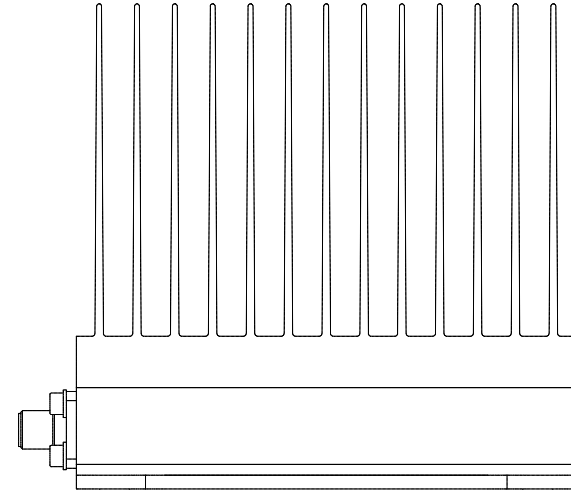
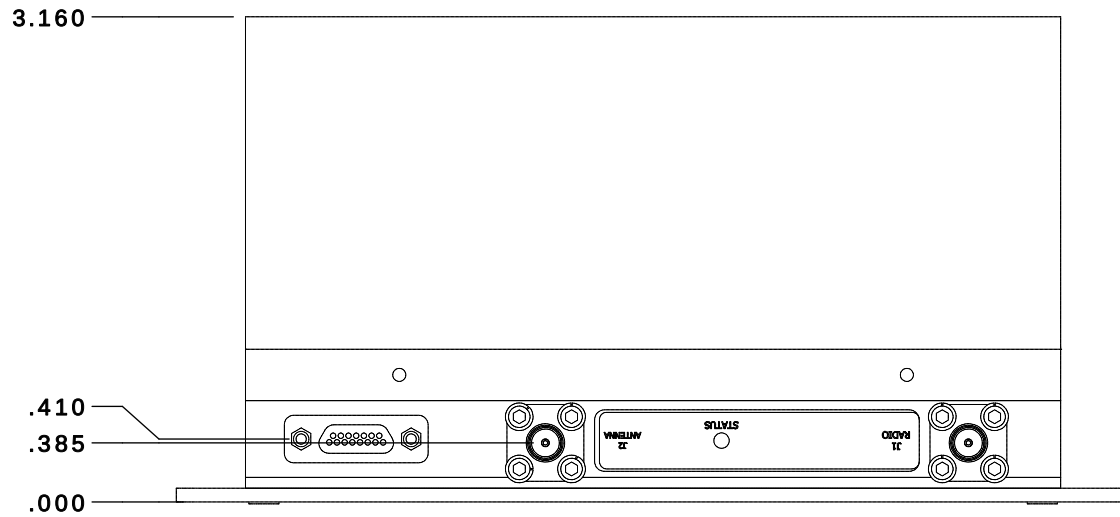


11 HARTS LANE SUITE I
EAST BRUNSWICK, NJ 08816
855 - 558 - 1001

HOUSING OUTLINE DRAWING 103

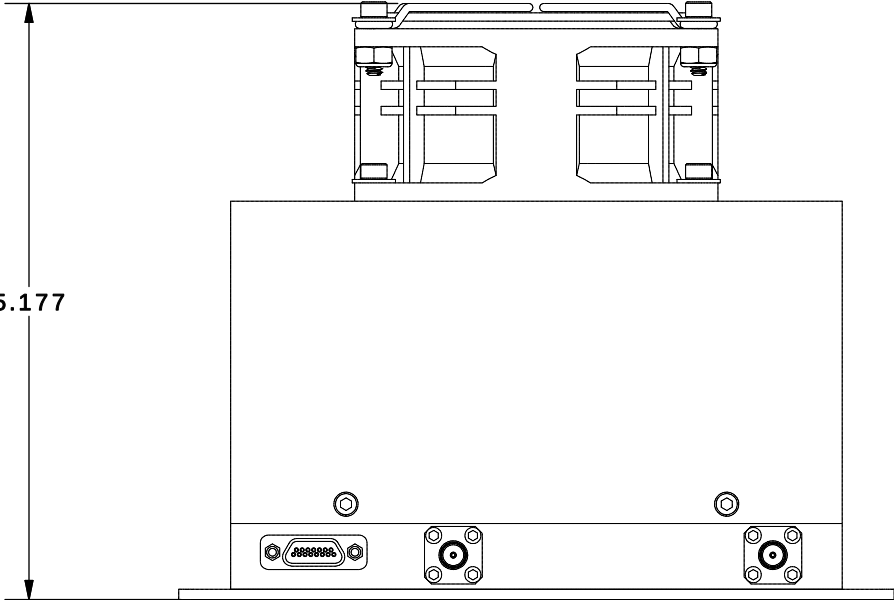
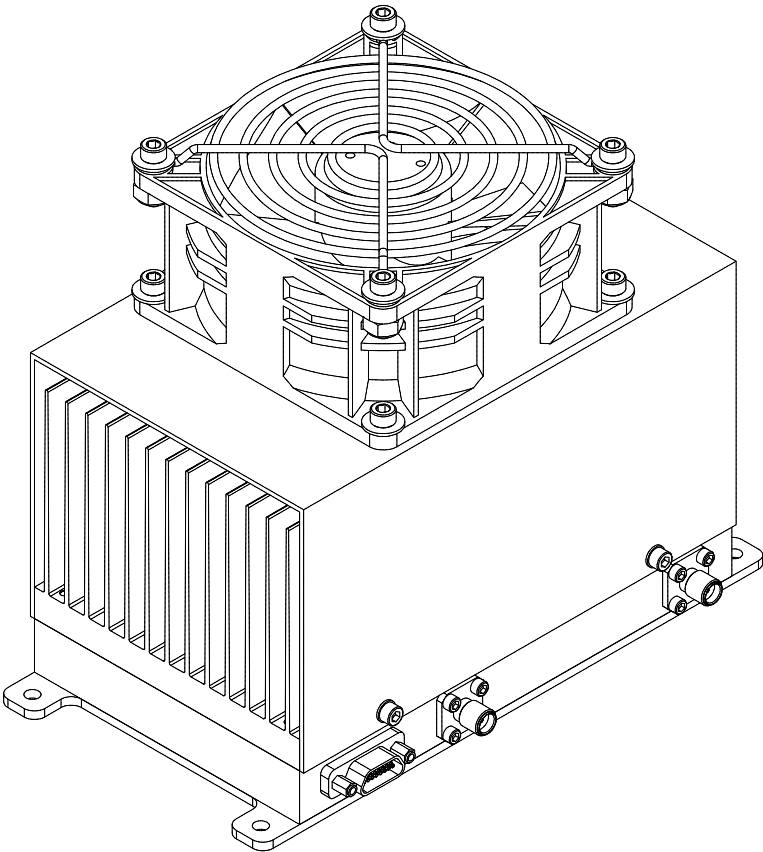
SIZE A	DWG NO. OL_103	REV 1
SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 4

HEATSINK



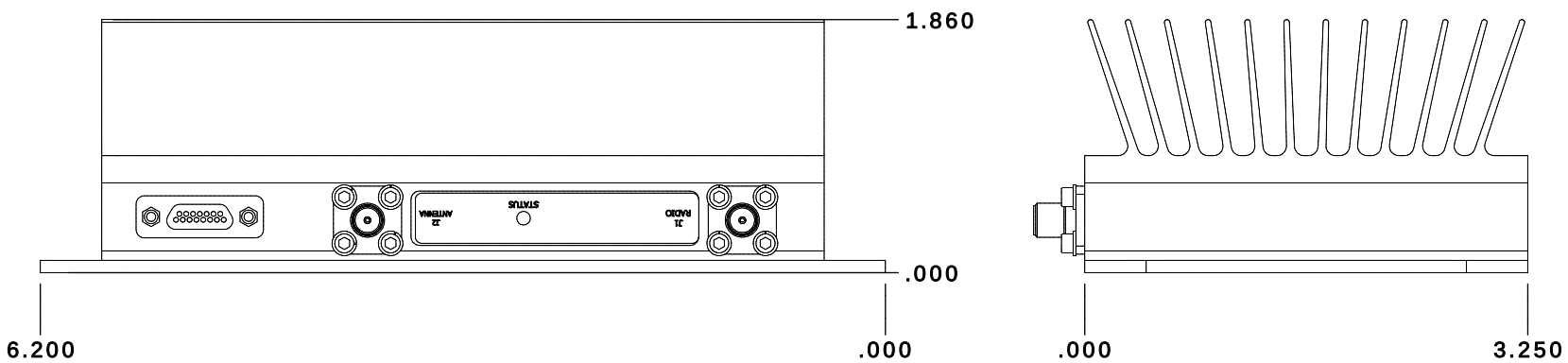
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DESIGNED	DMC	9/6/2013			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED			A	OL_103	1
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 2 OF 4

HEATSINK AND FAN



DRAWN	DMC	10/3/2013	HOUSING OUTLINE DRAWING 103			
DESIGNED	DMC	6/11/2015				
CHECKED			SIZE	DWG NO.	REV	
ENG APPROVED			A	OL_103	1	
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 4	

LOW PROFILE HEATSINK OPTION
CONTACT TRIAD FOR SAFE OPERATING
CONDITIONS REQUIRED FOR USE OF LOWER
HEIGHT HEATSINK



DRAWN	DMC	10/3/2013	HOUSING OUTLINE DRAWING 103		
DESIGNED	DMC	9/6/2013			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED			A	OL_103	1
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 4 OF 4