

DESCRIPTION

The TTRM3000 Bi-Directional Amplifier from Triad RF Systems has been designed for use specifically with the Persistent Systems MPU5 radio. Designed around a compact form factor, this 3-Channel MIMO BDA offers a maximum output power of **20 Watts per channel**, for a total of **60 Watts**. Its high output power and small size make it the perfect addition to manpack systems where performance and portability is essential.



FEATURES

Over / Under / Reverse Voltage Protection
Auto Tx/Rx Switching (RF Detect)

Temp. Monitor Output
Forward Power Measurement

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	2200		2507	MHz
PSat Power Output		+43.0		dBm
Gain		26.0		dB
Gain Flatness		1.0		± dB
Input Return Loss		-16		dB
Operating Voltage	+10		+28	VDC
Current Draw		3.0		A
Tx / Rx Switching Time		1.0	2.0	uS

RX SPECIFICATIONS (PER CHANNEL)				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		+15.0		dBm
Gain		15.0		dB
Gain Flatness		1.0		± dB
Noise Figure		2.1	2.5	dB
Input Return Loss		-10		dB
Current Draw		100.0		mA

MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	5.6 x 3.25 x 1.5	in
RF Connectors (Input / Output)	TNC-F / TNC-F	--
DC / Control Connector	Circular Locking	--
Cooling	Integrated Heatsink	--
Mounting	4-40 Through Holes	--
Weight	24	oz.

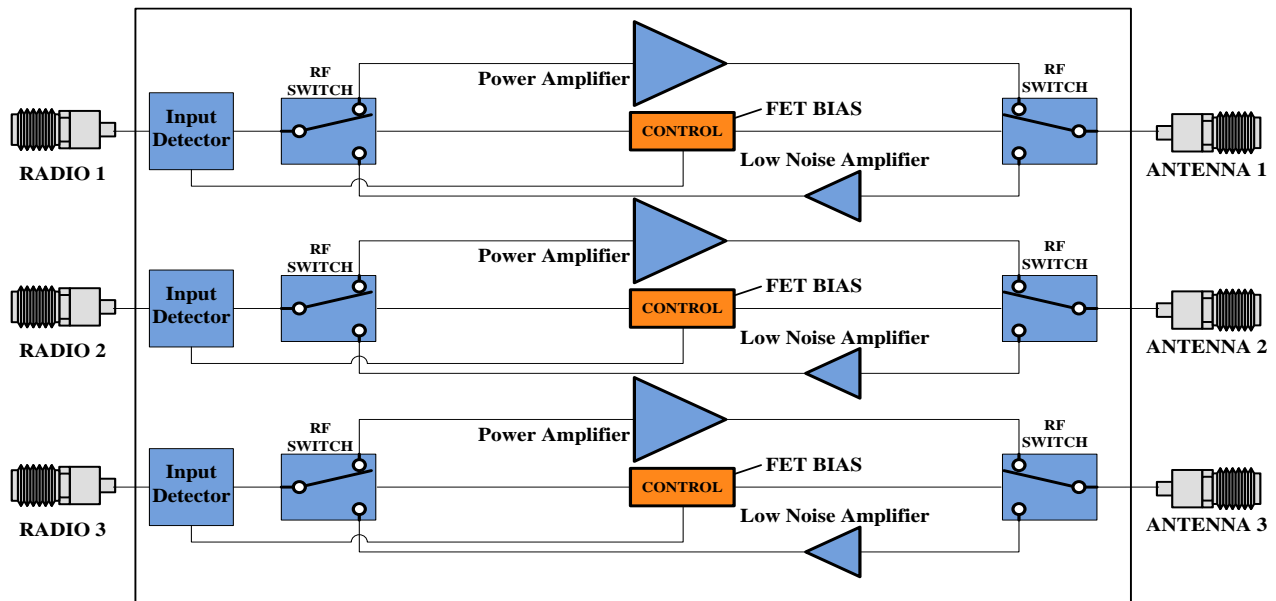
ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	+85	°C
Storage Temp Range	-60	+100	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input (Per Channel)	+20		dBm
PA Baseplate Shutoff Temperature	+85		°C

DC / CONTROL PINS		
AMPLIFIER CONNECTOR TYPE:		12 PIN CIRCULAR LOCKING
TRIAD CABLE PART NUMBER:		CBL66
PIN LABEL	NAME	DESCRIPTION
1-4	+VDC	Supply Voltage - Range Specified in Datasheet
5-8	GND	Ground
9	Tx/Rx	TTL High = Transmit Mode, TTL Low = Receive Mode, No Connection = Auto Tx/Rx Switching
10	FWD	Transmit Power Measurement
11	N/C	Reserved
12	SGND	Signal Ground

802-11G (20 MHz BW) DATA RATE VS. OUTPUT POWER (PER CHANNEL)			
OFDM MODULATION	DATA RATE	POUT (dBm) MIN.	EVM
64QAM	54 Mbps	38	≤ -27 dB
16QAM	36 Mbps	40	≤ -21 dB
QPSK	12 Mbps	42	≤ -15 dB
BPSK	9 Mbps	43	≤ -7 dB

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

High-Level Block Diagram

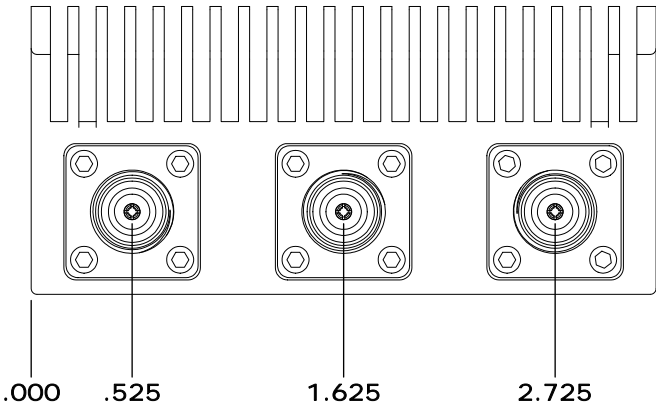
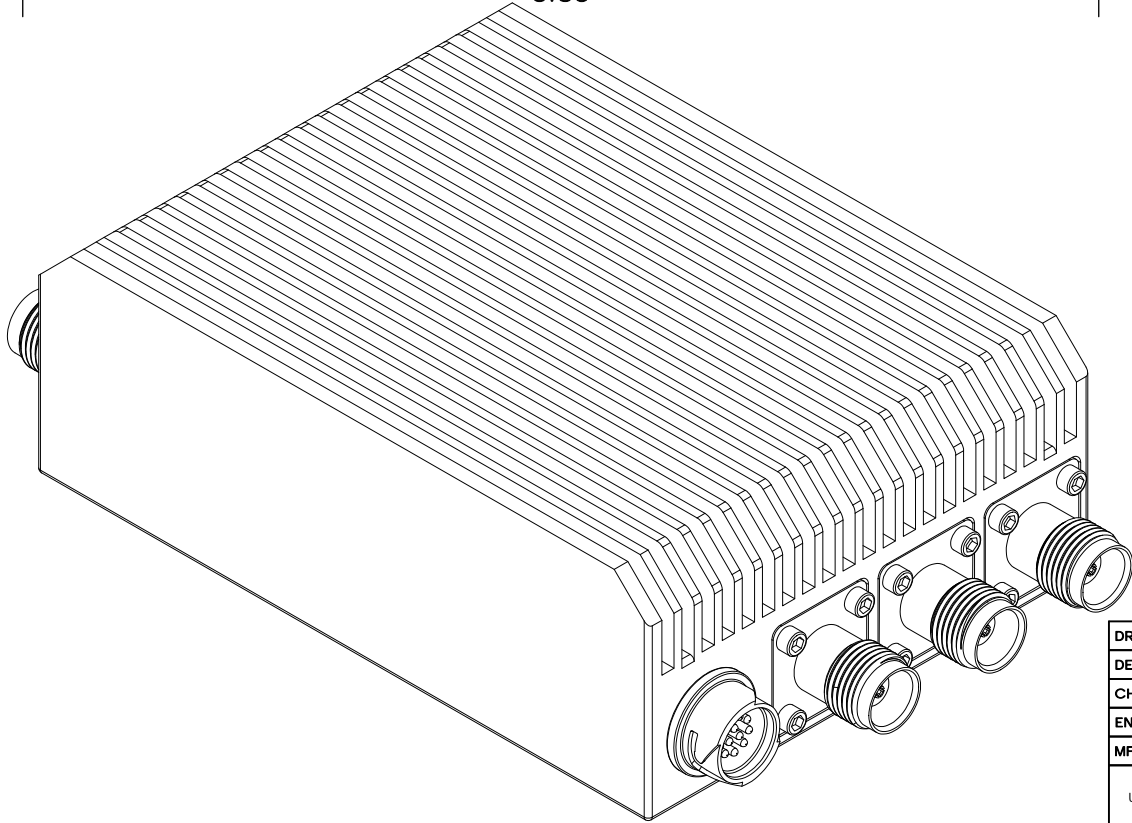
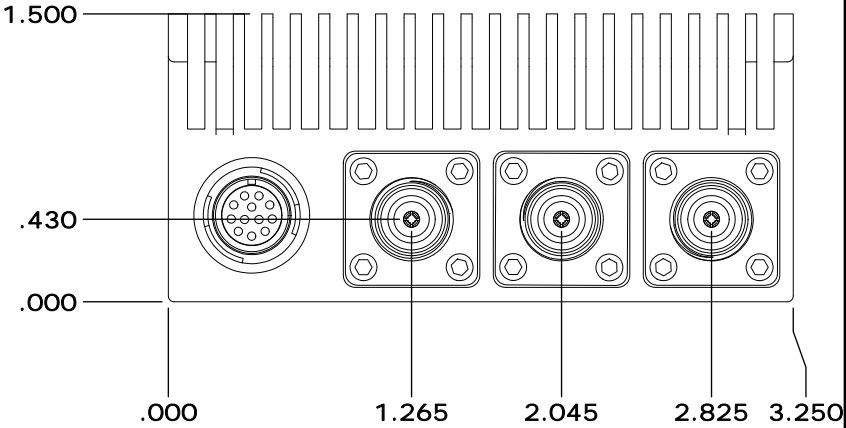
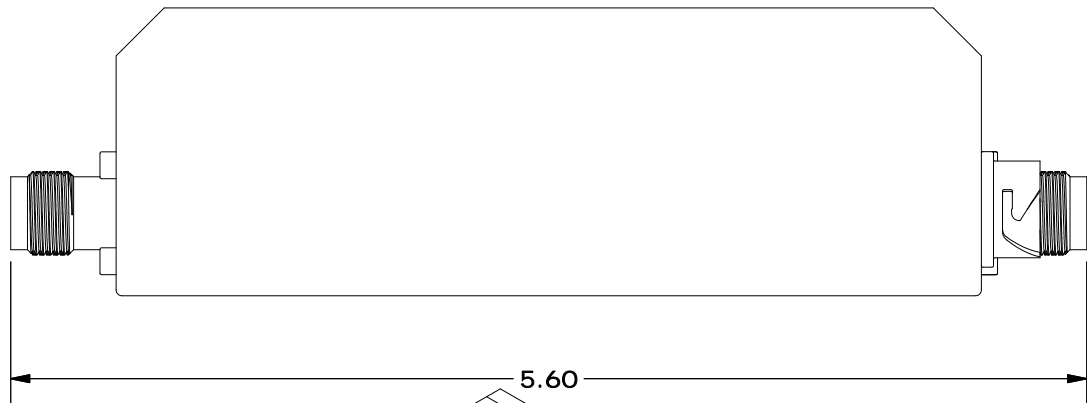


Ordering Guide – Configuration Information		
Model Number	Amplifier Option	Heat Sink Option
TTRMXXXX	- XXX	- XXX

Amplifier Options		Heat Sink Options	
Suffix	Description	Suffix	Description
D01	Automatic Tx/Rx Switching	N/A	Integrated Heatsink For other options please contact Triad RF Systems
D02	Manual Tx/Rx Switching		
DXX	Custom Amplifier Configuration (issued by Triad upon customer request)		

PRELIMINARY

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



DRAWN	DEAN	4/6/2018
DESIGNED	DEAN	4/6/2018
CHECKED		
ENG APPROVED		
MFG APPROVED		



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

SIZE	DWG NO.	REV
A	OL_194	
SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 1