

**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  
 Amplifier Status Output

Temp. Monitor Output  
 Internal Bypass Relay  
 Manual or Automatic Tx/Rx Switching Available

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	2200		2500	MHz
PSat Power Output		+40.0		dBm
Gain	24.0	25.0		dB
Gain Flatness		1.0		± dB
Input Return Loss	-15	-20		dB
Operating Voltage	+10	+28	+30	VDC
Current Draw		1.18		A
Tx / Rx Switching Time		1.0	2.0	uS

Rx SPECIFICATIONS				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		+5.0		dBm
Gain		15.0		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)	2.73 x 2.53 x 1.313	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	10 Pin Circular Locking	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	10	oz.

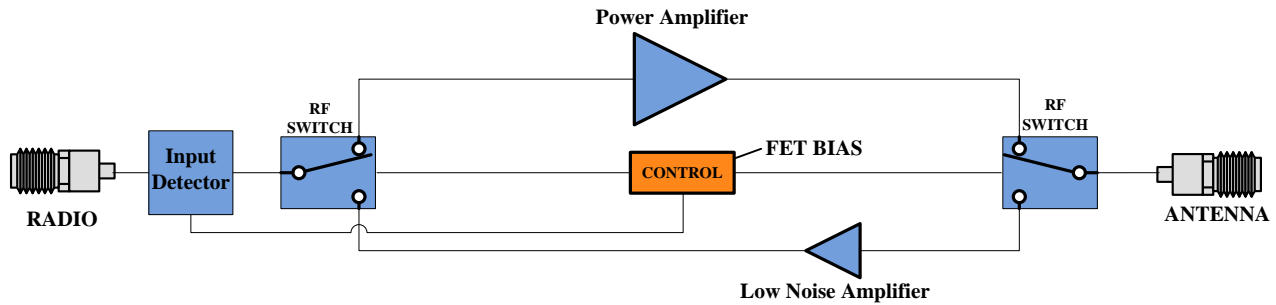
ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temperature (Housing Temp.)	-40	+85	°C
Humidity Range	0-95		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	33		dBm
PA Baseplate Shutoff Temperature	+85		°C

INPUT/OUTPUT PINS				
<b>AMPLIFIER CONNECTOR TYPE:</b>		<b>10 PIN CIRCULAR LOCKING</b>		
<b>TRIAD CABLE PART NUMBER:</b>		<b>CBL65</b>		
PIN LABEL	NAME	DESCRIPTION	TYPE	LEVEL
1-3	+VDC	Supply Voltage - Range Specified in Datasheet	Power	--
4	Tx/Rx	Tx / Rx Switching, TTL High - TX, TTL Low or No Connection - RX	Input	Analog
5	Bypass	Bypass Control: TTL High: Bypass Mode, GND: Amplifier On	Input	5V TTL
6	Status	BDA Status - TTL High = Normal Operation, TTL Low = Error Condition	Output	5V TTL
7	Temp	Temp Monitor: Temp in DegC = (Vout - 0.5V) *100	Output	Analog
8-10	GND	Voltage Supply Return	Power	--

802-11G (20 MHz BW) DATA RATE VS. OUTPUT POWER			
OFDM MODULATION	DATA RATE	POUT (W) MIN.	EVM
64QAM	54 Mbps	2	≤ -27 dB
16QAM	36 Mbps	4	≤ -21 dB
QPSK	12 Mbps	6	≤ -15 dB
BPSK	9 Mbps	10	≤ -7 dB

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

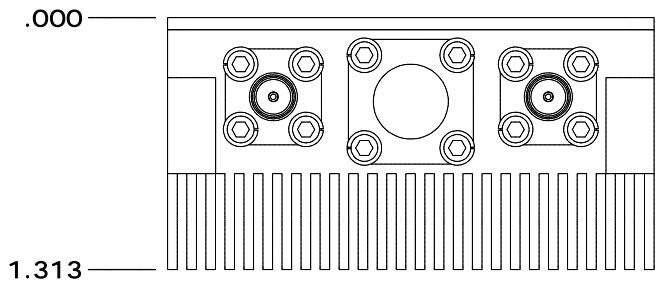
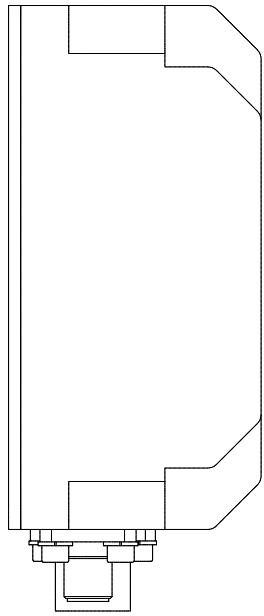
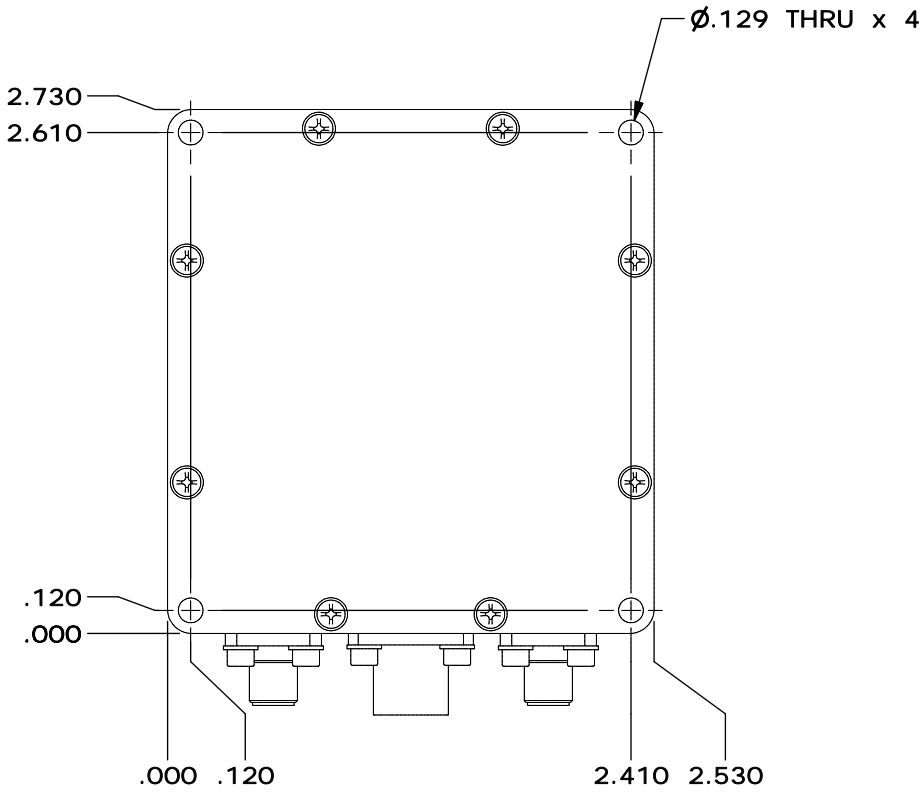
### High-Level Block Diagram



Ordering Guide – Configuration Information		
Model Number	Amplifier Option	Heat Sink Option
<b>TTRMXXXX</b>	<b>- XXX</b>	<b>- XXX</b>

Amplifier Options		Heat Sink Options	
Suffix	Description	Suffix	Description
D01	Automatic Tx/Rx Switching	(none)	Integrated Heat Sink
D02	Manual Tx/Rx Switching	F	Fan With Integrated Heat Sink
DXX	Custom Amplifier Configuration (issued by Triad upon customer request)		

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
O	INITIAL RELEASE	5/18/18	SC



DRAWN	scopp	10/3/2013
DESIGNED	scopp	4/25/2018
CHECKED		
ENG APPROVED		
MFG APPROVED		

**TRIAD**  
RF SYSTEMS

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

Housing Outline 193

DIMENSIONS ARE IN INCHES UNLESS SPECIFIED OTHERWISE TOLERANCES		SIZE	DWG NO.	REV
DECIMALS	FRACTIONS	A	OL_193	O
XX ±.01	± 1/32	SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 4
.XXX ±.005	± 2°			