

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

Temperature Output

Manual or Automatic Tx/Rx Switching Available

High Speed Tx/Rx Switching Control

Optional Heatsink

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	20		1000	MHz
PSat Power Output	+41.0	+43.0		dBm
Gain	45.0	46.0		dB
Gain Flatness		1.0	2.0	± dB
Input Return Loss	-12			dB
Operating Voltage	+27	+28	+30	VDC
Current Draw		2.0	3.0	A
Tx / Rx Switching Time		1.0	2.0	uS

Rx SPECIFICATIONS				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		+5.0		dBm
Gain	19.0	20.0		dB
Gain Flatness		2.0	3.0	± dB
Noise Figure		4.0		dB
OIP3		+15.0		dBm
Input Return Loss	-8	-10		dB
Current Draw		200.0		mA

MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	3.33 x 2.69 x 0.65	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	Circular Locking	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	5	oz.
Weight With Heatsink	15	oz.

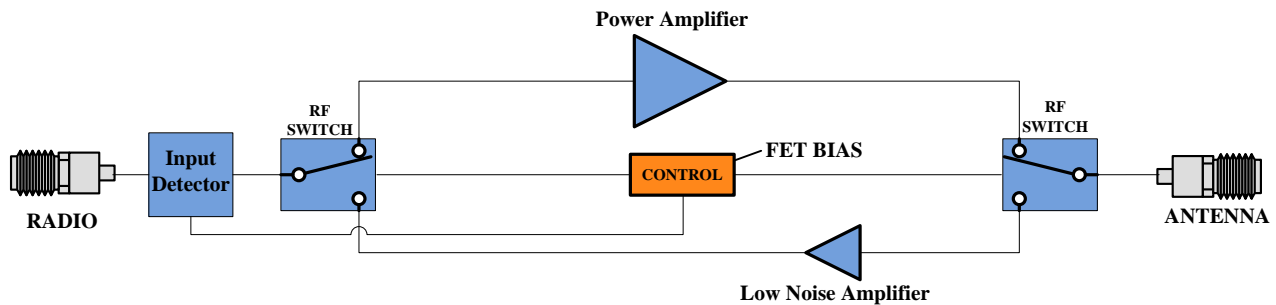
ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temperature (Housing Temp.)	-40	+85	°C
Storage Temperature	-60	+100	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	0		dBm
Load VSWR @ P1dB	Open / Short Output Protection		--
PA Baseplate Shutoff Temperature	+90		°C

INPUT/OUTPUT PINS				
AMPLIFIER CONNECTOR TYPE:		CIRCULAR BAYONET LOCKING MALE		
TRIAD CABLE PART NUMBER:		CBL13		
PIN LABEL	NAME	DESCRIPTION	TYPE	LEVEL
1	Tx/Rx	Tx / Rx Switching (+5V = Tx Amp Active / 0V = Rx Amp Active)	Input	5V TTL
2	GND	Ground	Power	--
3	+VDC	Supply Voltage - Range Specified in Datasheet	Power	--

802-11G (20 MHz BW) DATA RATE VS. OUTPUT POWER			
OFDM MODULATION	DATA RATE	POUT (W) MIN.	EVM
64QAM	54 Mbps	4	≤ -27 dB
16QAM	36 Mbps	4	≤ -21 dB
QPSK	12 Mbps	4	≤ -15 dB
BPSK	9 Mbps	18	≤ -7 dB

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

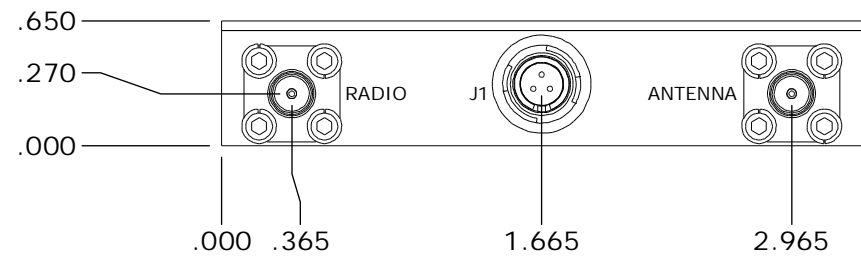
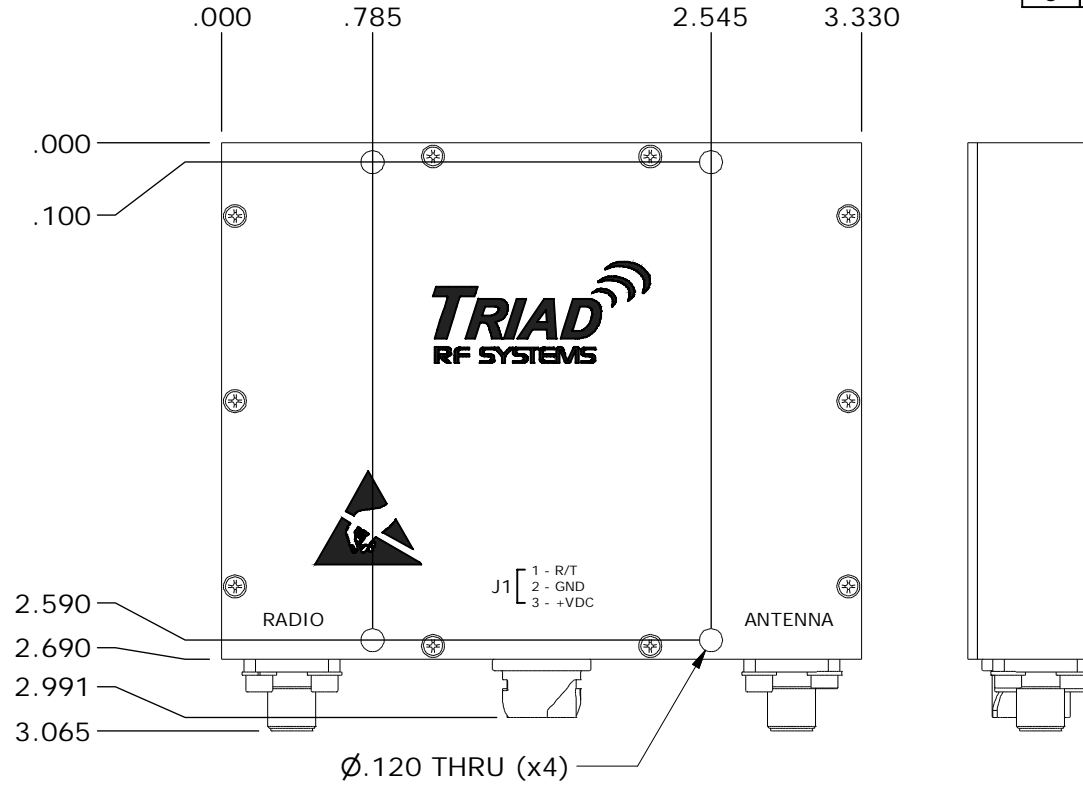
High-Level Block Diagram



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	08/03/2014	DMC



DRAWN	AHA	6/17/2014
DESIGNED	DCH	7/12/2013
CHECKED	BG	6/17/2014
ENG APPROVED		
MFG APPROVED		

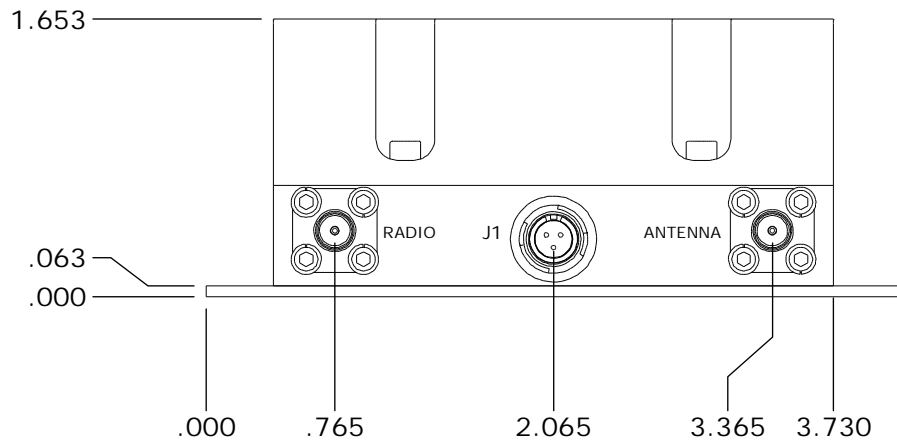
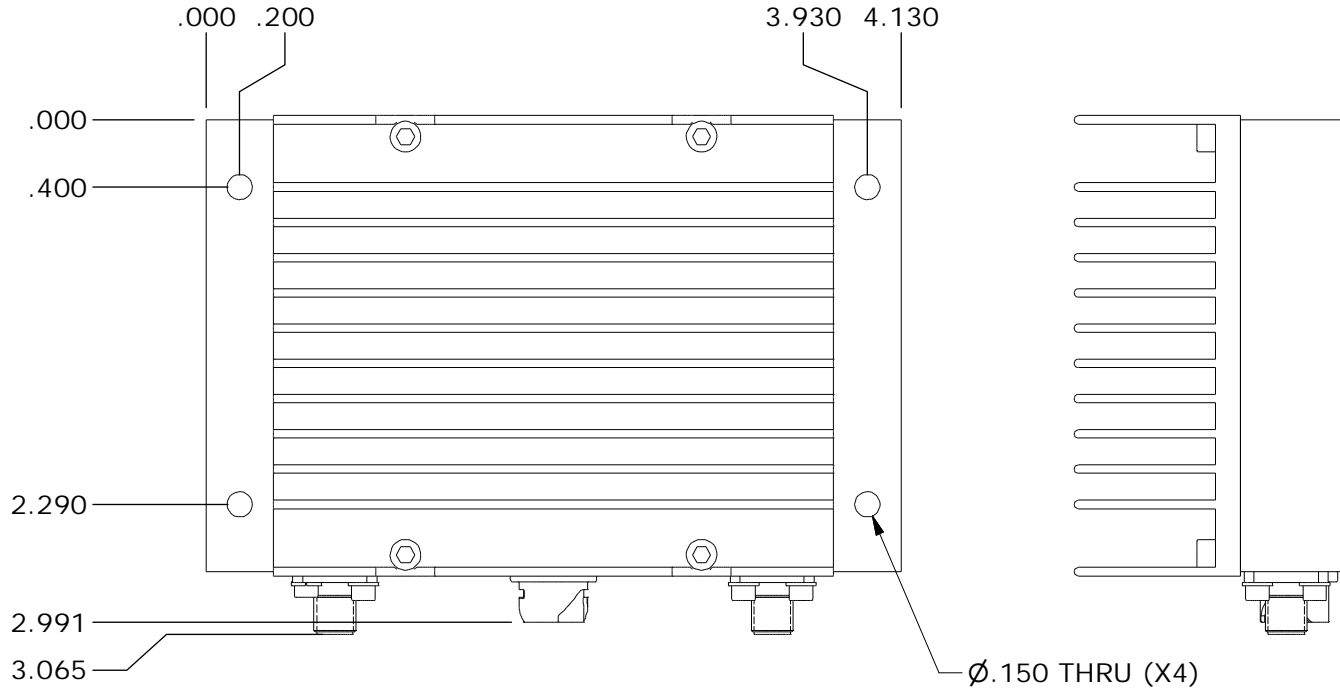
TRIAD
RF SYSTEMS

180 TICES LANE
BUILDING A, SUITE 107
EAST BRUNSWICK, NJ 08816
855- 558- 1001

HOUSING OUTLINE DRAWING 118

DIMENSIONS ARE IN INCHES UNLESS SPECIFIED OTHERWISE TOLERANCES		SIZE A	DWG NO. OL_118	REV 0
DECIMALS XX ±.01 XXX ±.005	FRACTIONS ± 1/32	ANGLES ± 2°	SCALE: NONE	CAGE CODE 67DZ3
			SHEET 1 OF 3	

OPTIONAL HEATSINK



DRAWN	AHA	6/17/2014	HOUSING OUTLINE DRAWING 118		
DESIGNED	DCH	7/12/2013			
CHECKED	BG	6/17/2014	SIZE	DWG NO.	REV
ENG APPROVED			A	OL_118	O
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 2 OF 3

A

B

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D

E

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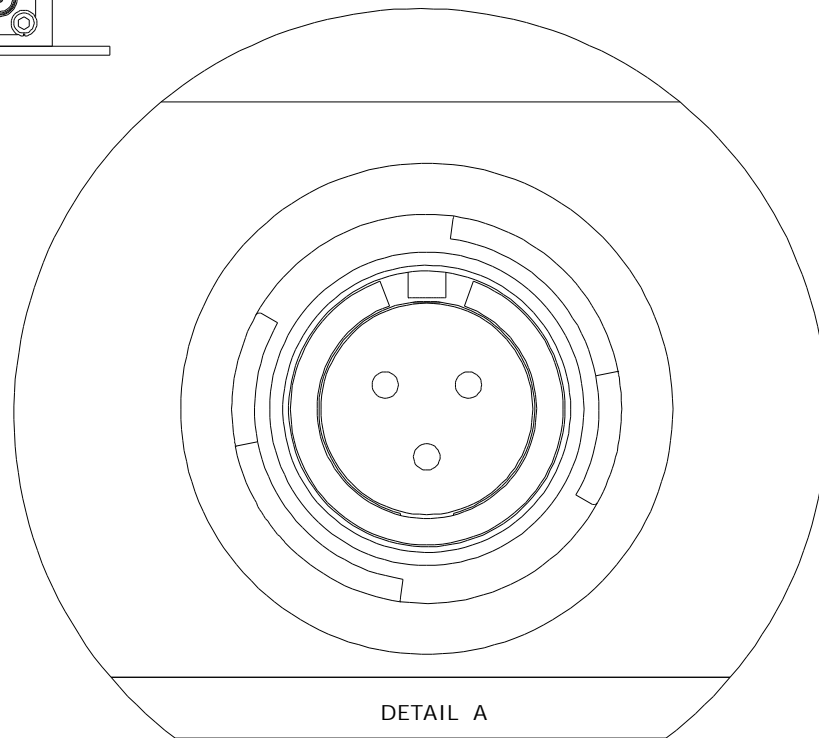
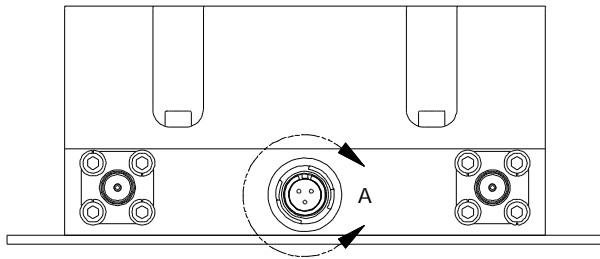
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PINOUT TABLE		
PIN	LABE	FUNCTION
1	R/T	RX/TX
2	GND	GROUND WIRE
3	+DC	SUPPLY VOLTAGE

NOTES:

1. VIEW FACING CONNECTOR INTERFACE (AMP SIDE).
2. P/N OF CONNECTOR ON AMPLIFIER: HIROSE LF07WBP-3P.
3. UNIT SHOWN WITH OPTIONAL HEATSINK.

DRAWN	AHA	6/17/2014	HOUSING OUTLINE DRAWING 118		
DESIGNED	DCH	7/12/2013			
CHECKED	BG	6/17/2014	SIZE	DWG NO.	REV
ENG APPROVED			A	OL_118	O
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 3

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