

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
Optional Heatsink

High Speed On/Off Control
Temperature Compensation

Specifications subject to change without notice. Typical performance at +20VDC at 25°C in a 50Ω system

Tx SPECIFICATIONS				
PARAMETER	MIN	TYP.	MAX	UNIT
Operating Frequency	30		2700	MHz
PSat Power Output	+38.0	+39.0		dBm
Gain	34.0	35.0		dB
Gain Flatness		3.0	4.0	± dB
Input Return Loss	-12	-14		dB
Operating Voltage	+11	+20	+28	VDC
Current Draw		1.2	1.5	A
Tx / Rx Switching Time		1.0	2.0	uS

Rx SPECIFICATIONS				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		+5.0		dBm
Gain	16.0	20.0		dB
Gain Flatness		2.0		± dB
Noise Figure		2.0	3.0	dB
Input Return Loss	-9	-12		dB
Current Draw		100.0	200.0	mA

MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	3.25 x 2.12 x 0.53	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	8 Pin Rectangular Male	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	4	oz.
Weight With Heatsink	8	oz.

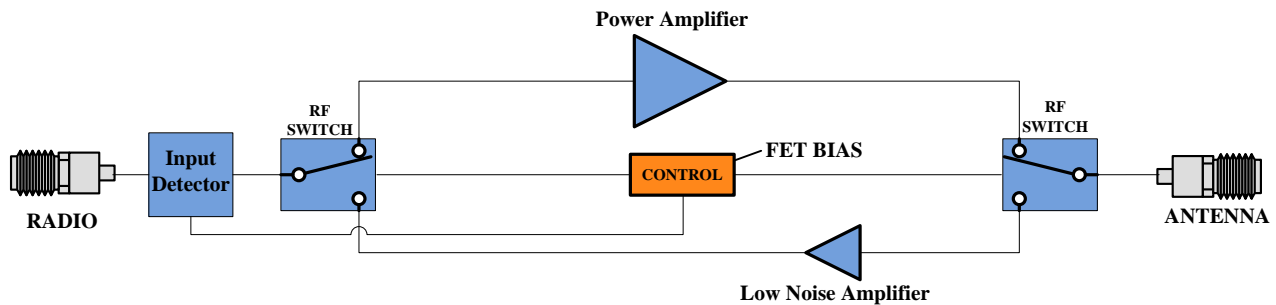
ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temperature (Housing Temp.)	-40	+80	°C
Storage Temperature	-60	+150	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	9		dBm
Load VSWR @ P1dB	Open / Short Output Protection		--
PA Baseplate Shutoff Temperature	+90		°C

INPUT/OUTPUT PINS				
AMPLIFIER CONNECTOR TYPE:		8 PIN RECTANGULAR MALE		
TRIAD CABLE PART NUMBER:		CBL50		
PIN LABEL	NAME	DESCRIPTION	TYPE	LEVEL
1	TEMP	Analog Temperature Sensor Output	Power	--
2,4,6	GND	Ground	Power	--
3	Tx/Rx	TTL Hi = Transmit Mode, TTL Lo or No Connection = Receive Mode	Input	1.8V TTL
5,7	+VDC	Supply Voltage - Range Specified in Datasheet	Power	--
8	SGND	Signal Ground	Input	5V TTL

802-11G (20 MHz BW) DATA RATE VS. OUTPUT POWER			
OFDM MODULATION	DATA RATE	POUT (W) MIN.	EVM
64QAM	54 Mbps	1	≤ -27 dB
16QAM	36 Mbps	2	≤ -21 dB
QPSK	12 Mbps	5	≤ -15 dB
BPSK	9 Mbps	8	≤ -7 dB

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

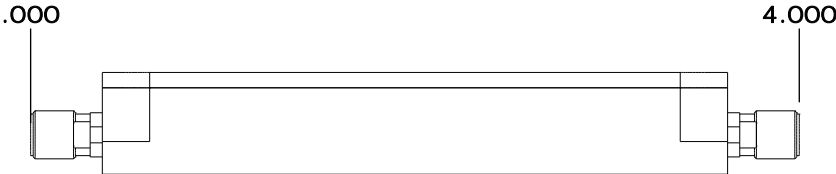
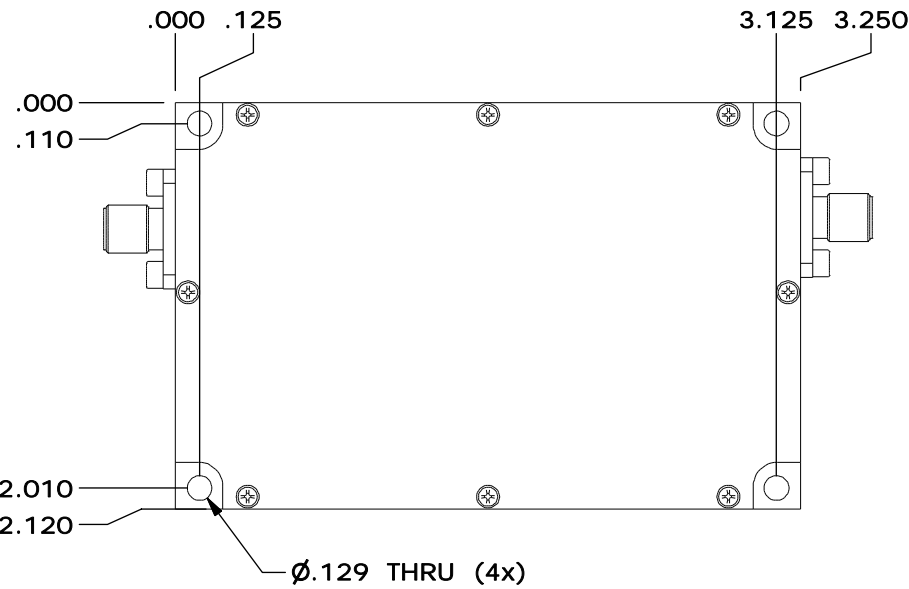
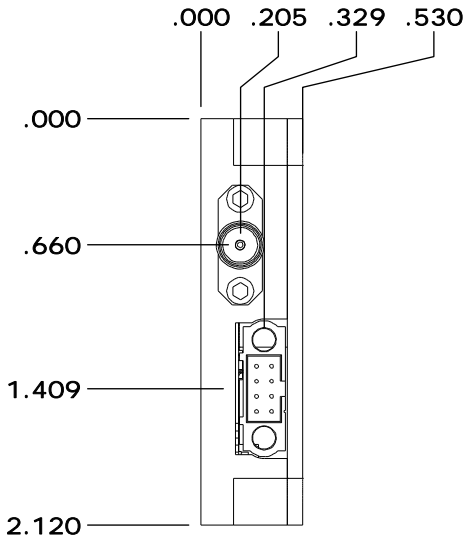
High-Level Block Diagram



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
O	INITIAL RELEASE	9/12/17	AC

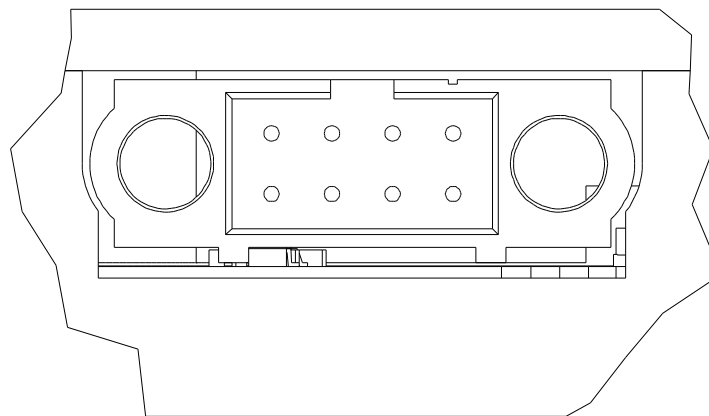
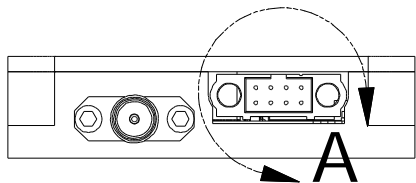


DRAWN	AC	9/12/17
DESIGNED	DEAN	6/22/2017
CHECKED		
ENG APPROVED		
MFG APPROVED		

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

Housing Outline 179

DIMENSIONS ARE IN INCHES UNLESS SPECIFIED OTHERWISE		SIZE	DWG NO.	REV
DECIMALS	FRACTIONS	A	OL_179	O
.XX ±.01	± 1/32	SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 4
.XXX ±.005	± 2°			



DETAIL A
SCALE 4 : 1

NOTES:

VIEW FACING CONNECTOR INTERFACE (AMP SIDE)

CONNECTOR ON AMPLIFIER:
HARWIN M80-5400842
(TRIAD P/N 400-176)

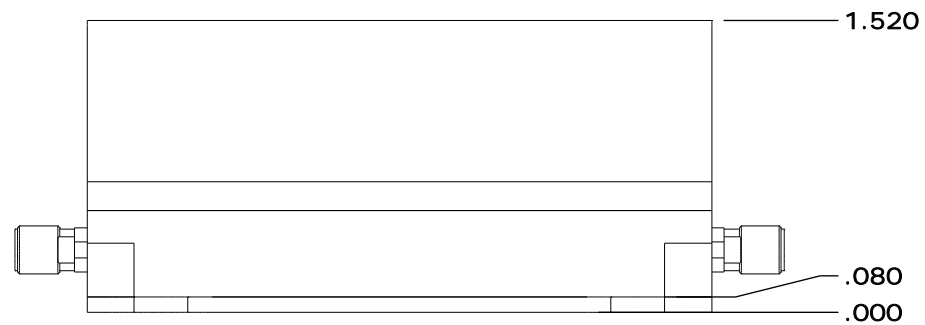
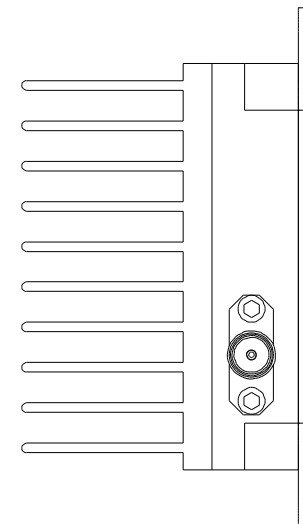
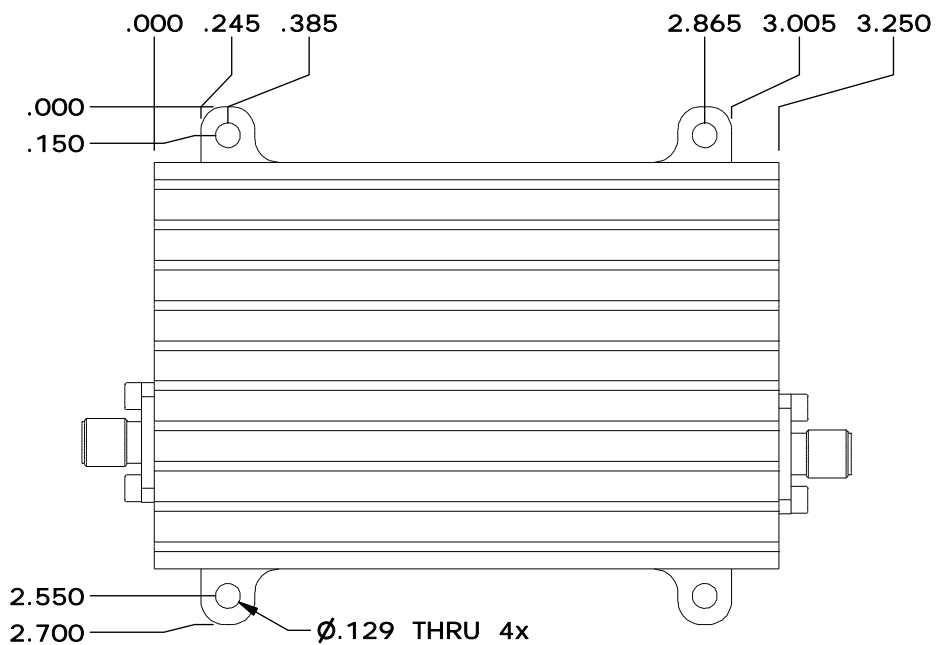
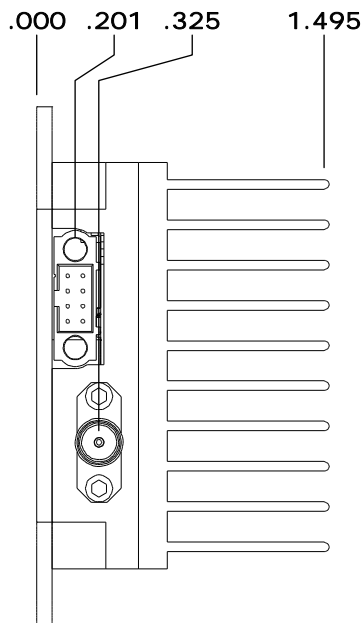
MATING CABLE REQUIRED:
HARWIN M80-4610842
(TRIAD P/N CBL50)

EQUIVALENT CONNECTOR FROM
ALTERNATE MANUFACTURERS MAY BE
USED - CONTACT TRIAD FOR APPROVAL

PINOUT		
PIN #	LABEL	FUNCTION
5,7	+VDC	SUPPLY VOLTAGE
2,4,6,8	GND	GROUND
3	TX/RX	TTL CONTROL LINE FOR TX/RX CONTROL TTL LO - RECIEVE MODE / TTL HI - TRANSMIT MODE
1	TEMP	TEMP MONITOR OUT: TEMP IN DEG C = ((VOLTAGE MEASURED AT PIN - .5) * 100)

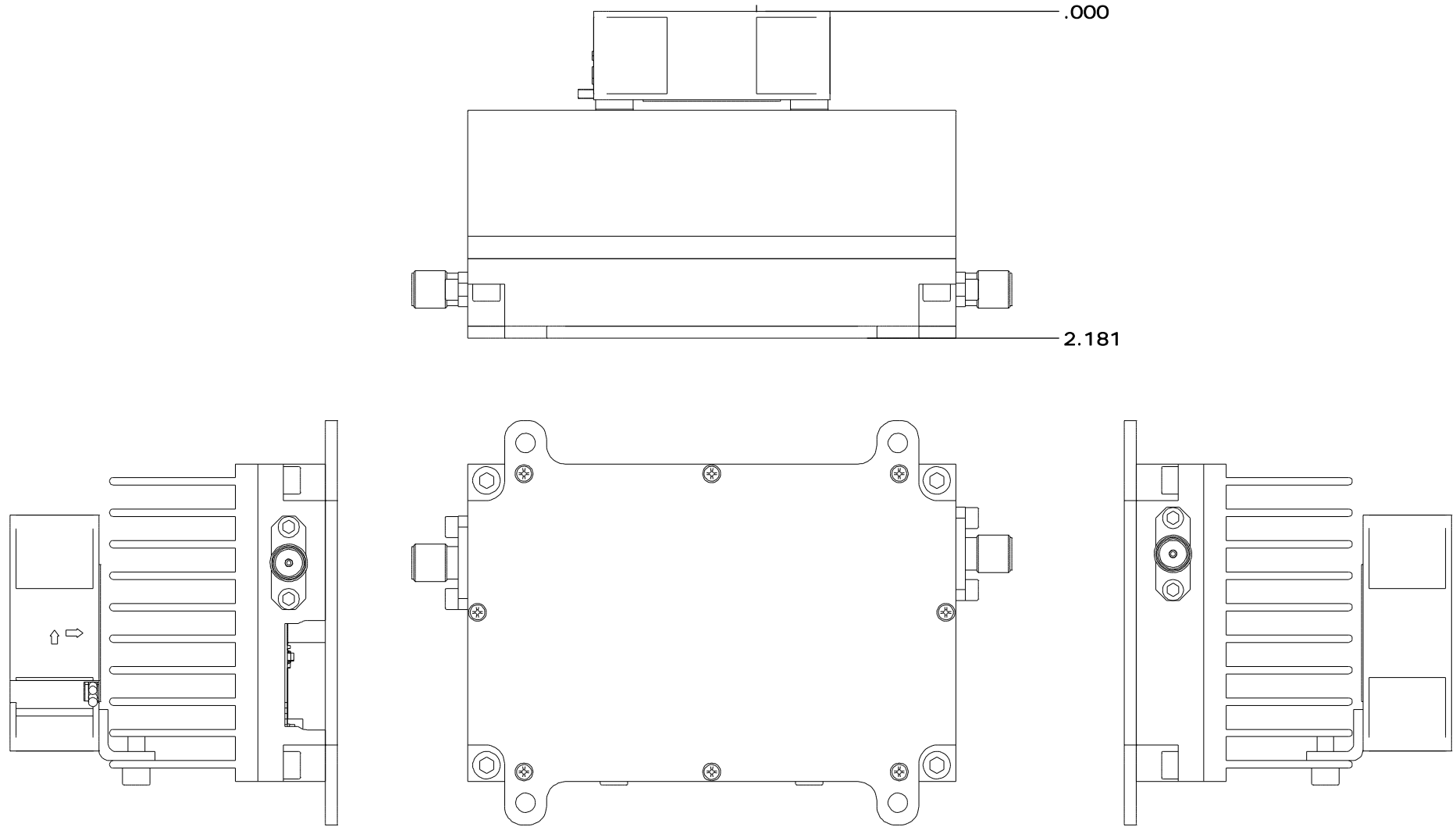
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DESIGNED	DEAN	6/22/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED			A	OL_179	0
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 2 OF 4

OPTIONAL HEATSINK



DRAWN	AC	9/12/17	Housing Outline 179		
DESIGNED	DEAN	6/22/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED			A	OL_179	O
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 4

OPTIONAL HEATSINK AND COOLING FAN



DRAWN	AC	9/12/17	Housing Outline 179		
DESIGNED	DEAN	6/22/2017			
CHECKED			SIZE	DWG NO.	REV
ENG APPROVED			A	OL_179	O
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 4 OF 4