Bi-Directional Amplifiers

TTRM1076D

400-450 MHz 55W Dual Bi-Directional SSPA

DESCRIPTION

This class A 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

Optional Heatsink
High Speed Tx/Rx Switching Control
Manual Tx/Rx Switching (TTL)
Temp. Monitor Output

Specifications subject to change without notice. Typical performance at +12VDC at 25°C in a 50Ω system

TX SPECIFICATIONS (PER CHANNEL)				
PARAMETER	MIN	TYP.	MAX	UNIT
Operating Frequency	400		450	MHz
PSat Power Output		+48.0		dBm
Gain	27.0	28.0		dB
Gain Flatness		1.0		± dB
Input Return Loss	-16	-18		dB
Operating Voltage	+11	+12	+13	VDC
Current Draw		8.0	10.0	A
Tx / Rx Switching Time		2.0	3.0	uS

RX SPECIFICATIONS (PER CHANNEL)				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		+5.0		dBm
Gain		11.0		dB
Gain Flatness		1.0		± dB
Noise Figure		2.5	4.0	dB
OIP3		+15.0		dBm
Input Return Loss	-12	-14		dB
Current Draw		200.0	450.0	mA

Triad RF Systems Inc. | 11 Harts Ln, Suite i, East Brunswick, NJ 08816
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rev 04/7/20

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MECHANICAL		
PARAMETER	**VALUE**	**UNIT**
Dimensions (L x W x H)	5.5 x 6 x 0.79	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	25 Pin Micro-D	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	M4 x 0.7 -6H (4X)	--
Weight	30	oz.
Weight With Heatsink	62	oz.

ENVIRONMENTAL / PROTECTIONS			
PARAMETER	**MIN**	**MAX**	**UNIT**
Operating Temp. (Housing Temp.)	-40	+85	°C
Humidity Range	-		%
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input (Per Channel)	+19		dBm
PA Baseplate Shutoff Temperature	+90		°C

DC / CONTROL PINS		
AMPLIFIER CONNECTOR TYPE:	**25 PIN MICRO-D FEMALE**	
TRIAD CABLE PART NUMBER:	**CBL95**	
PIN LABEL	**NAME**	**DESCRIPTION**
1,2,3,4,14,15,16 ,17	+VDC	Supply Voltage - Range Specified in Datasheet
5	TEMP 1	Temp Monitor: Temp in DegC = (Vout - 0.5V) *100
6	TEMP 2	Temp Monitor: Temp in DegC = (Vout - 0.5V) *100
10,11,12,13,22, 23,24,25	GND	Ground
18	STATUS 1	Auto Internal Fault Detection- Low= No Fault, High= Internal Fault
19	STATUS 2	Auto Internal Fault Detection- Low= No Fault, High= Internal Fault
7,8,9	NC	Not Connected
20	TX/RX	TTL Control Line for Manual TX/RX Control - TTL LOW: RX Mode, TTL HIGH: TX Mode

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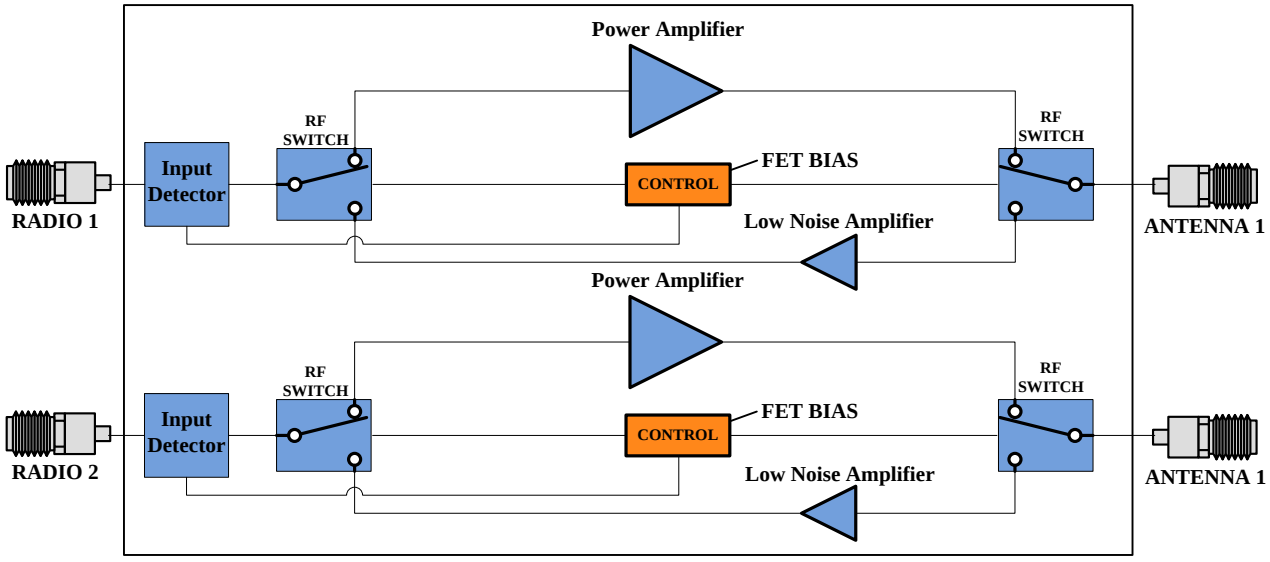
802-11G (20 MHz BW) Data Rate vs. Output Power (Per Channel)			
OFDM Modulation	Data Rate	POut (W) Min.	EVM
64QAM	54 Mbps	8	≤ -27 dB
16QAM	36 Mbps	12	≤ -21 dB
QPSK	12 Mbps	25	≤ -15 dB
BPSK	9 Mbps	55	≤ -7 dB

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
TTRMXXXXD - XXX - XXX		

Amplifier Options	
Suffix	Description
D01	Automatic Tx/Rx Switching
D02	Manual Tx/Rx Switching
DXX	Custom Amplifier Configuration (issued by Triad upon customer request)

Heat Sink Options	
Suffix	Description
(none)	No Heat Sink Included
HS	Standard Heat Sink
HSF	Heat Sink with Integrated Cooling Fan
HSX	Custom Heat Sink Configuration

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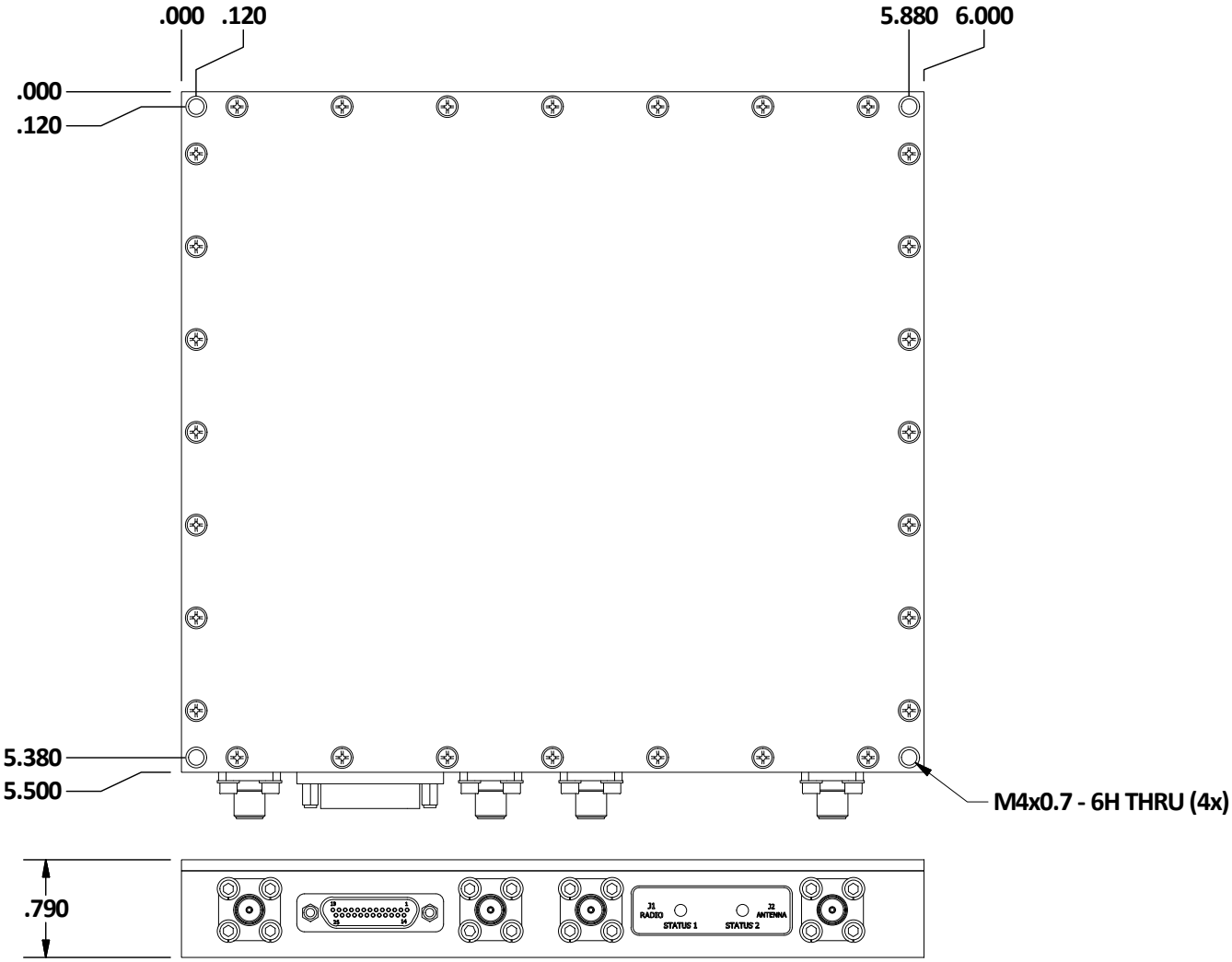
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	3/20/17	DH
1	E20647	6/23/20	AK



DRAWN	DEAN	3/20/2017
DESIGNED	PA	1/14/2016
CHECKED	SNB	6/23/2020
ENG APPROVED	SNB	6/23/2020
MFG APPROVED	SNB	6/23/2020

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

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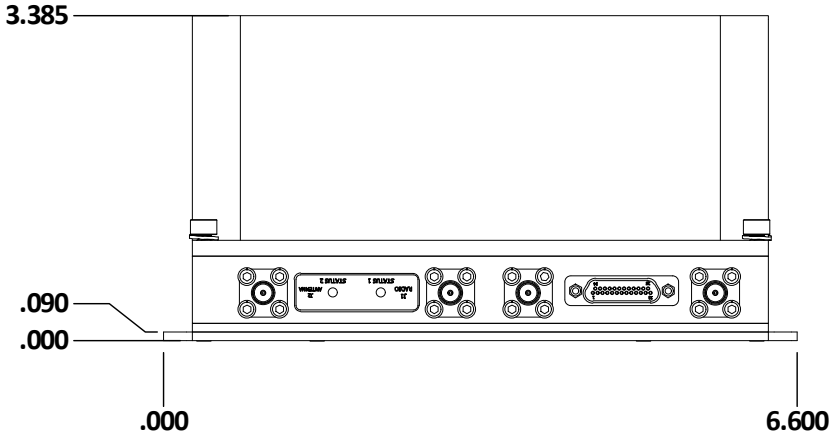
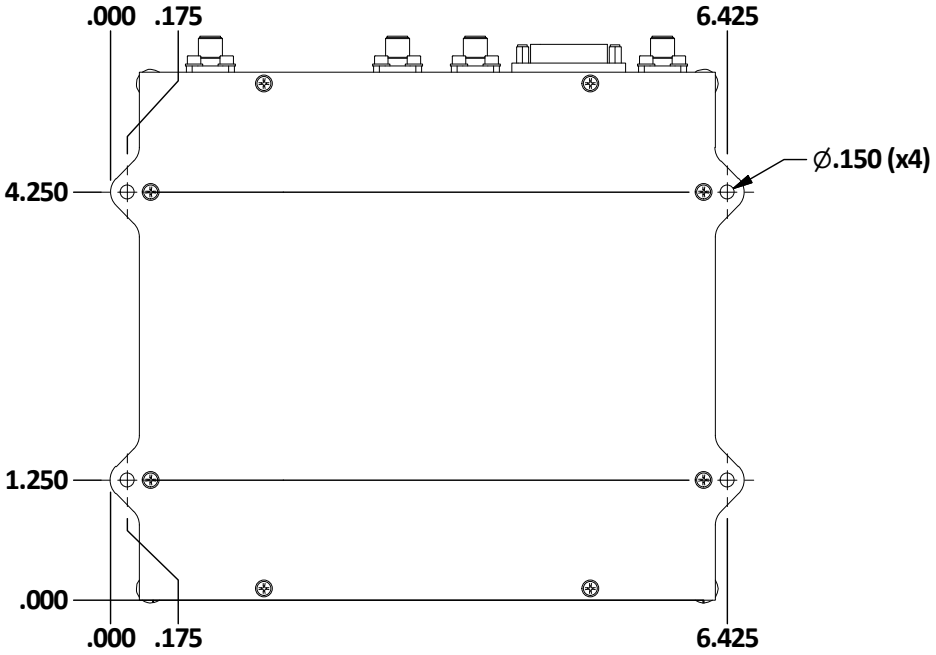
OL_166

SIZE	DWG NO.	REV
A	OL_166	1

SCALE: NONE | CAGE CODE 67DZ3 | SHEET 1 OF 2

HS Option





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