TTRM1063 |1700-2000MHz 25W
Bi-Directional Amplifier

Bi-Directional Amplifiers

Description

This class A GaAs 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
- Reflected Power Measurement
- Temperature Output
- Manual or Automatic Tx/Rx Switching Available
- Forward Power Measurement
- High Speed T/R Switching Control
- Optional Heatsink

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

Tx Specifications				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Operating Frequency	1700		2000	MHz
P1dB Power Output	+43.0	+44.0		dBm
Gain	44.0	45.0		dB
Gain Flatness		1.0	1.5	dB
Input Return Loss	-16	-18		dB
Operating Voltage	+11	+12	+13	VDC
Current Draw		11.0	12.0	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		0.5	1.3	dB
Noise Figure		2.0	3.0	
OIP3		+15.0		dBm
Input Return Loss	-8	-10		dB
Current Draw		200.0		mA

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rev 07/15/14

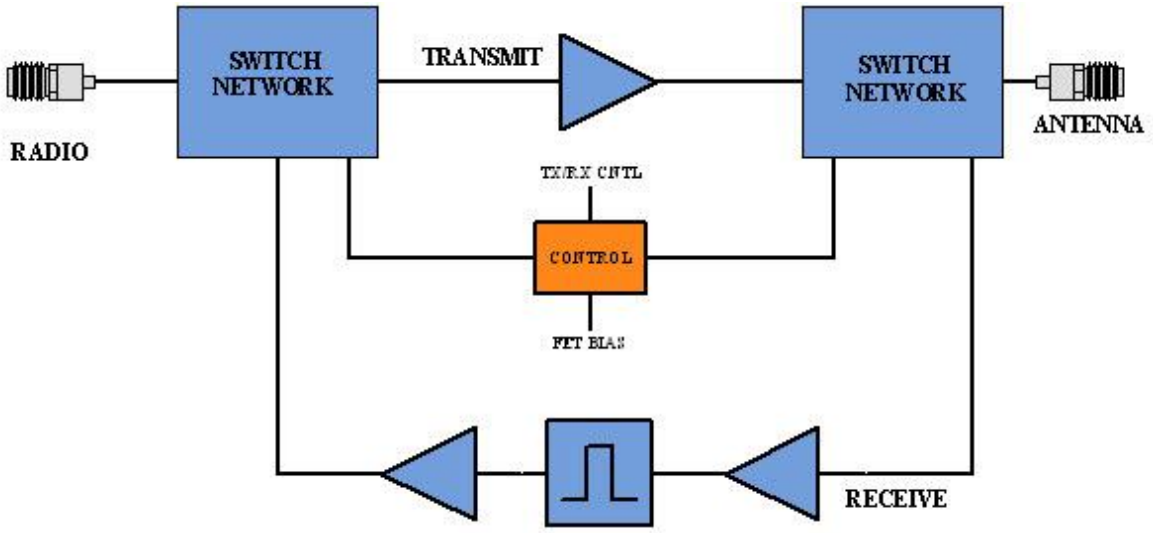
MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	5.3 x 3.25 x 0.57	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	7W2 Male	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	4-40 Thru Holes	--
Weight	12	oz
Weight With Heatsink	22	oz

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	+2		dBm
Load VSWR @ P1dB	Open / Short Output Protection		--
PA Baseplate Shutoff Temperature	+90		°C

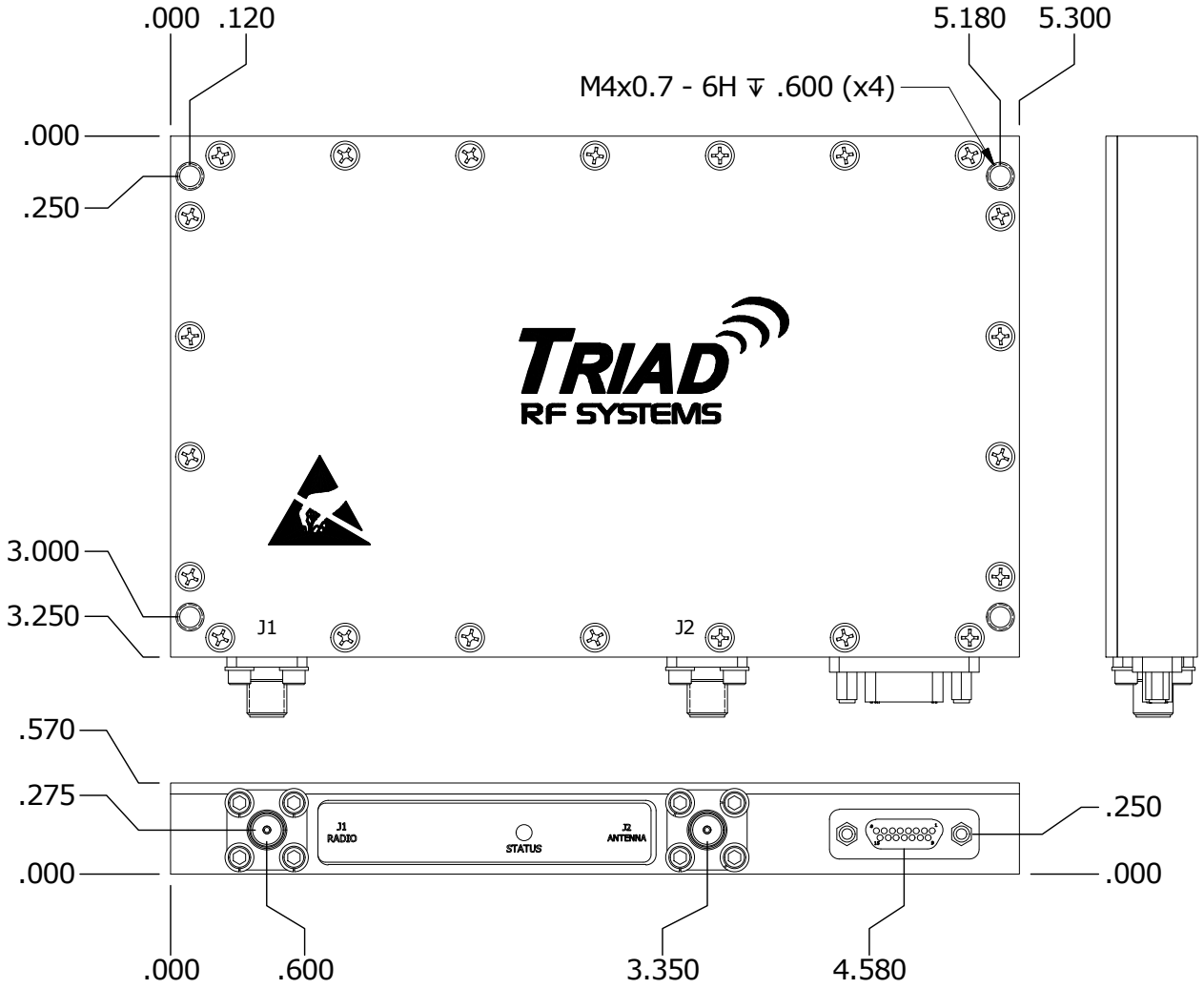
DC / CONTROL PINS		
PIN LABEL	NAME	DESCRIPTION
A1	GND	Ground
1	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) / 10
2	Tx/Rx	Tx / Rx Switching (+5V = Tx Amp Active / 0V = Rx Amp Active)
3	REV	Reverse Power Detection
4	GND	Ground
5	FWD	Forward Power Detection
A2	+VDC	Supply Voltage - Range Specified in Datasheet

DATA RATE VS. OUTPUT POWER	
OFDM MODULATION	POUT (W)
64QAM OFDM	7.94
16QAM OFDM	12.59
QPSK	17.78
BPSK	25.12

See our application note that describes how this data was taken and how you can apply it to your system



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	08/15/14	DMC



DRAWN	AHA	6/3/2014
DESIGNED	DMC	9/6/2013
CHECKED	BG	6/17/2014
ENG APPROVED		
MFG APPROVED		

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

TRIAD RF SYSTEMS
180 TICES LANE
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EAST BRUNSWICK, NJ 08816
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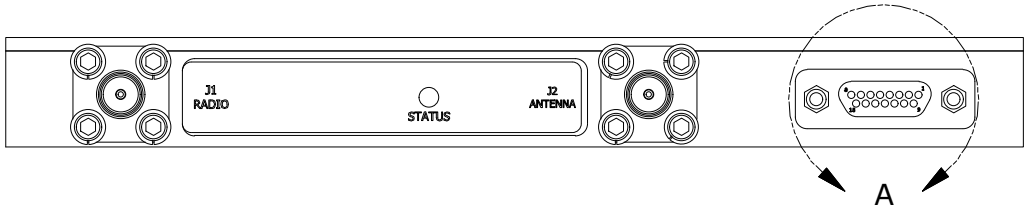
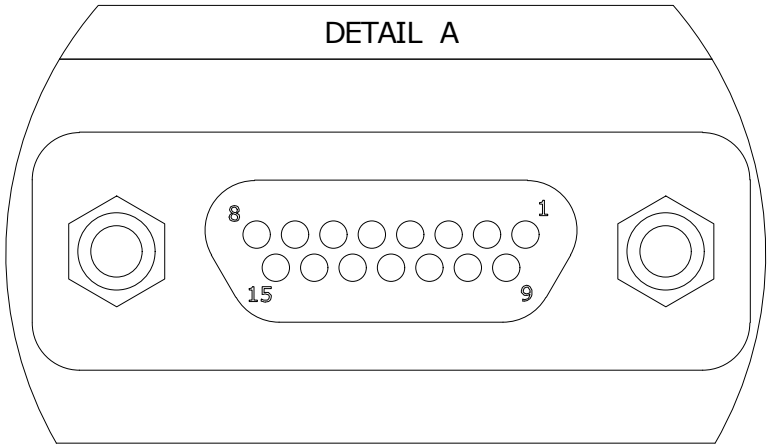
Housing Outline 103

SIZE	DWG NO.	REV
A		0

SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 3





CONNECTOR PINOUT				
PIN	FUNCTION	HIGH	LOW	NOTES
1-4	+VDC	-	-	
5	SIG. GND	-	-	RETRUN FOR ALL SIGNAL AND CTRL PINS
6	GAIN CTRL	HIGH GAIN SETTING	LOW GAIN SETTING	
7	STATUS	NORMAL OPERATION	ERROR CONDITION	3.3V TTL LOGIC OUTPUT
8	TEMP	-	-	ANALOG TEMPERATURE SENSOR OUTPUT*
9-12	GND	-	-	+VDC SUPLY RETURN
13-14	N/C	-	-	NOT USED - NO CONNECTION WITHIN AMP
15	Tx/Rx CTRL	SSPA IN TX MODE (LNA OFF, PA ON)	SSPA IN RX MODE (LNA ON, PA OFF)	3.3V TTL LOGIC INPUT (5V COMP) ONLY ACTIVE WHEN MANAL SWITCH IS ENABLED

NOTES:

1. VIEW FACING CONNECTOR INTERFACE (AMP SIDE)

2. P/N OF CONNECTOR ON AMPLIFIER: ITT MDM-15PSB

3. EQUATION TO CALCULATE TEMPERATURE AT PIN 8:
(VOLTAGE READ - 0.5V) x 100 = AMP TEMP IN DEG C

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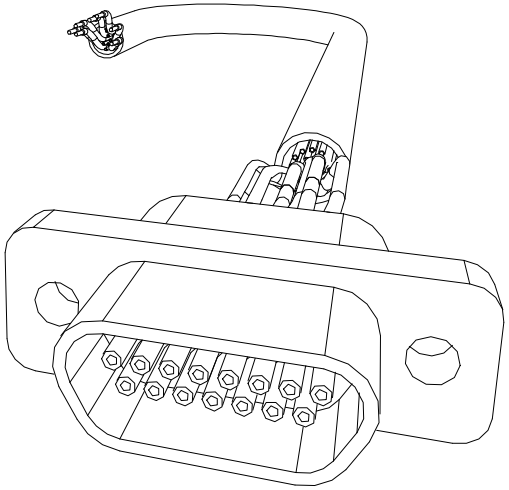
ENG APPROVED		
MFG APPROVED		

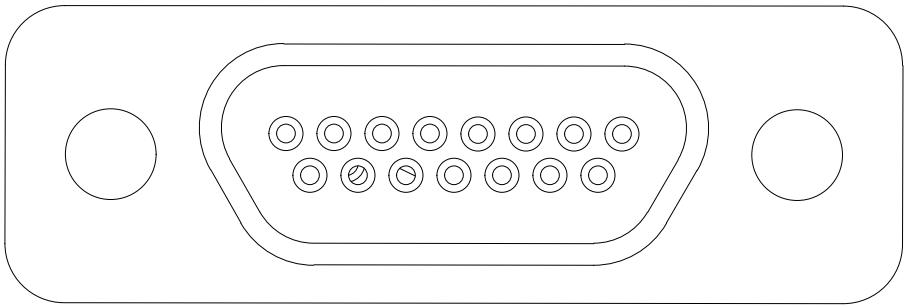
Housing Outline 103

SIZE	DWG/PART NO.	REV
A		0

SCALE: NONE | CAGE CODE 67DZ3 | SHEET 2 OF 3



MATE CABLE



MDM-15SSB

NOTES:

1. P/N OF MATING CONNECTOR REQUIRED: ITT MDM-15SSB OR EQUIVALENT
2. TRIAD CABLE P/N: C14061201
3. WIRE DIAMETER: 24 AWG

DRAWN	AHA	6/3/2014
DESIGNED	AHA	6/4/2014
CHECKED	BG	6/17/2014
ENG APPROVED		
MFG APPROVED		

Housing Outline 103

SIZE	DWG/PART NO.	REV
A		0

SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 3