TTRM1084 |5300-5900MHz 10W
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

Optional Heatsink
Manual Gain Control
Temperature Output
Over / Under / Reverse Voltage Protection
Manual or Automatic Tx/Rx Switching Available
Thermal Shutdown

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	5300		5900	MHz
P1dB Power Output		+40.0		dBm
Gain	23.0	25.0		dB
Gain Flatness		1.0	1.5	± dB
Input Return Loss	-9	-12		dB
Operating Voltage	+11	+12	+13	VDC
Current Draw		6.5	7.0	A
Tx / Rx Switching Time		1.0	2.0	uS

Rx Specifications				
Parameter	**Min**	**Typ.**	**Max**	**Unit**
P1dB Power Output		+5.0		dBm
Gain	10.0	11.0		dB
Gain Flatness		0.5	1.3	± dB
Noise Figure		3.0	4.5	dB
OIP3		+15.0		dBm
Input Return Loss		-12		dB
Current Draw		100.0		mA

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rev 03/30/15

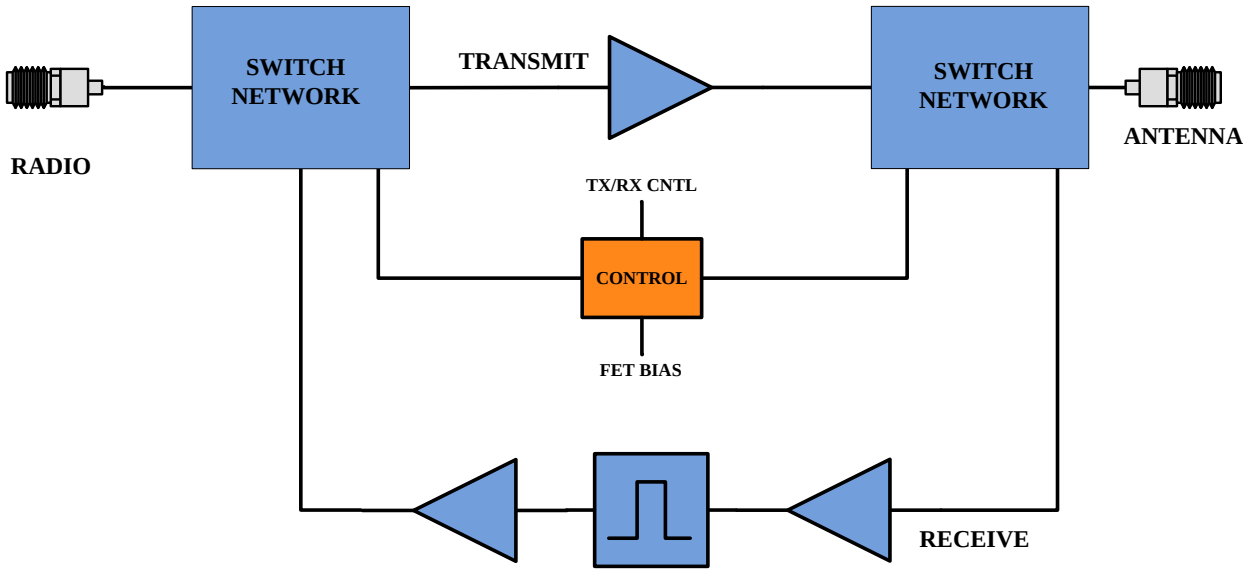
MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	5.3 x 3.25 x 0.57	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	15 Pin Micro-D	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Mounting	Thru-Holes for M4x0.7 screws	--
Weight	13	oz.
Weight With Heatsink	35	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	+19		dBm
Load VSWR @ P1dB	Open / Short Output Protection		--
PA Baseplate Shutoff Temperature	+90		°C

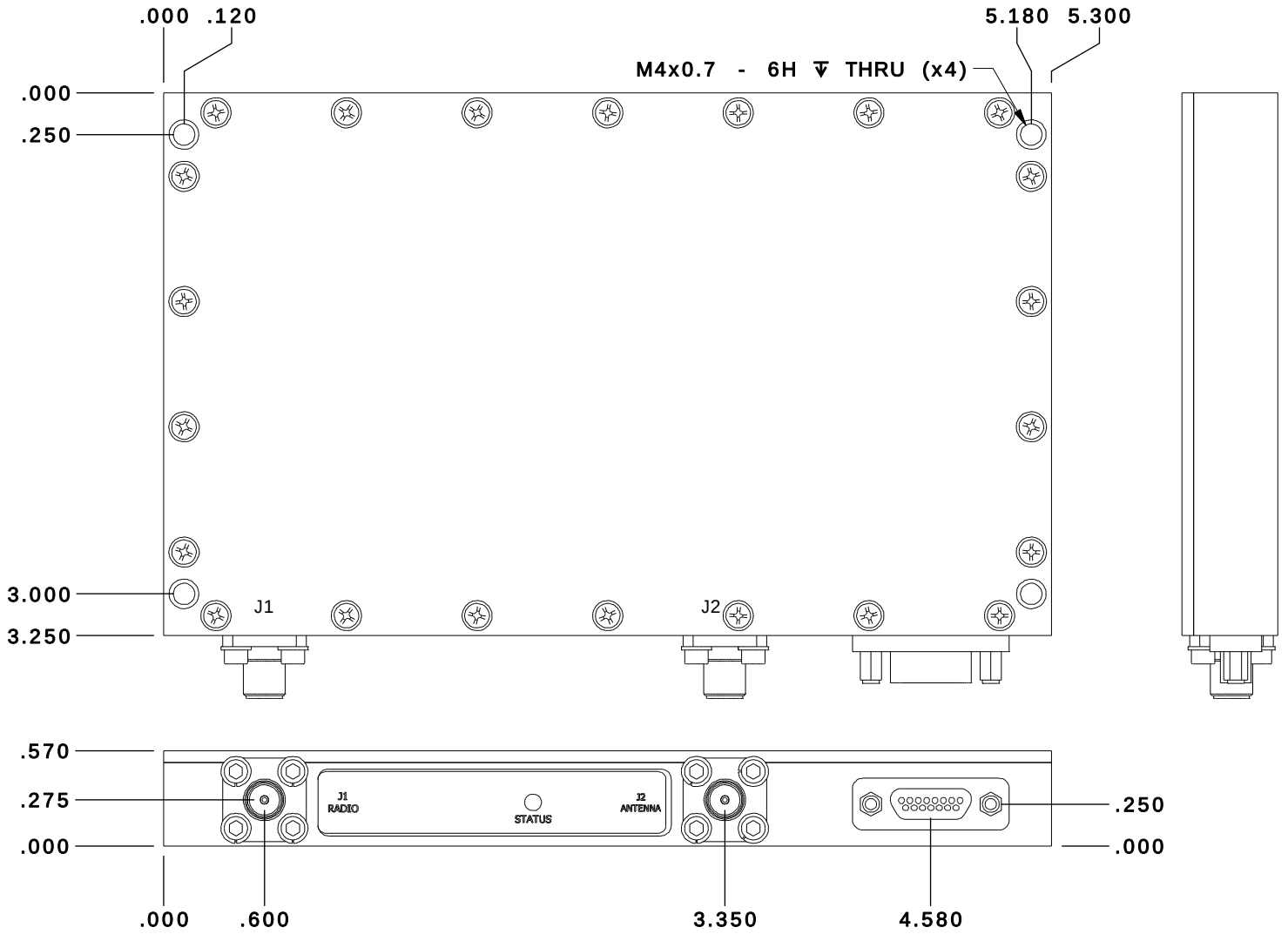
DC / CONTROL PINS		
PIN LABEL	NAME	DESCRIPTION
1-4	+VDC	Supply Voltage - Range Specified in Datasheet
5	Sig. GND	Return for all Signal and CTRL Pins
6	Gain CTRL	High=High Gain, Low=Low Gain
7	Status	3.3V TTL Logic Output
8	TEMP	Analog Temperature Sensor Output
9-12	GND	+VDC Supply Return
13-14	N/C	No Connection
15	TX/RX CTRL	3.3V TTL. High = TX, Low = RX

DATA RATE VS. OUTPUT POWER	
OFDM MODULATION	POUT (W)
64QAM OFDM	2.5
16QAM OFDM	6.3
QPSK	4.0
BPSK	10.0

See our application note that describes how this table was calculated and provides notes on in-system performance



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	5/3/15	DMC



DRAWN	DMC	10/3/2013
DESIGNED	DMC	9/6/2013
CHECKED		
ENG APPROVED		
MFG APPROVED		

DIMENSIONS ARE IN INCHES
UNLESS SPECIFIED OTHERWISE
TOLERANCES

DECIMALS	FRACTIONS	ANGLES
.XX ±.01 .XXX ±.005	±1/32	±2°

TRIAD RF SYSTEMS
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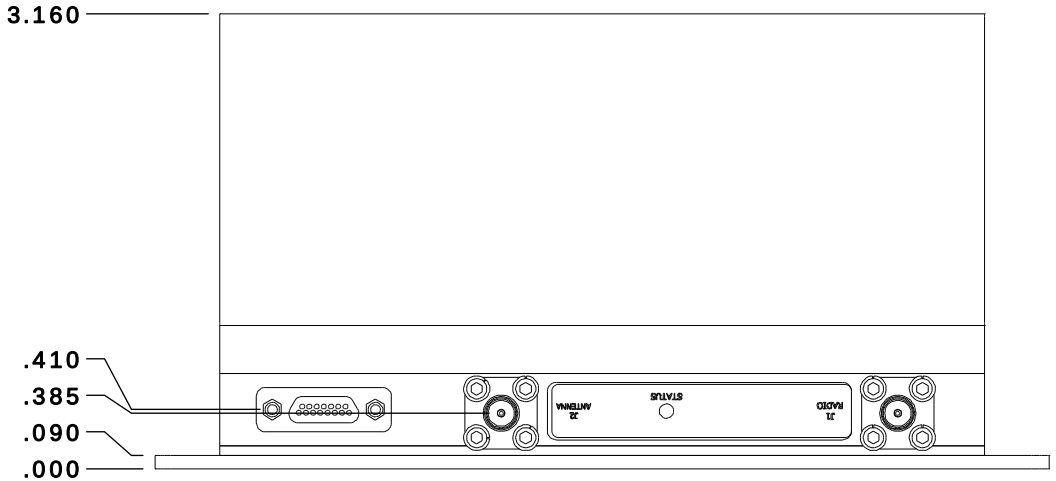
855 - 558 - 1001

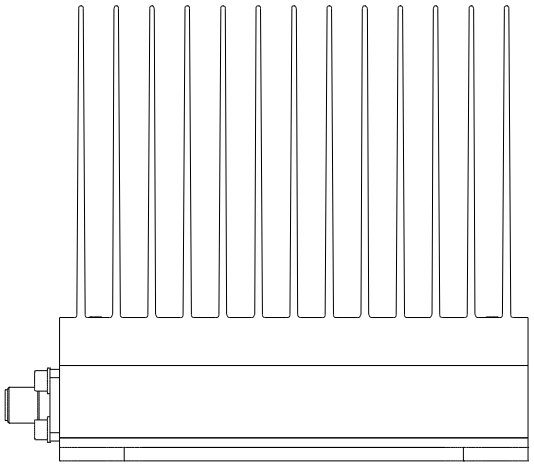
HOUSING OUTLINE DRAWING 103

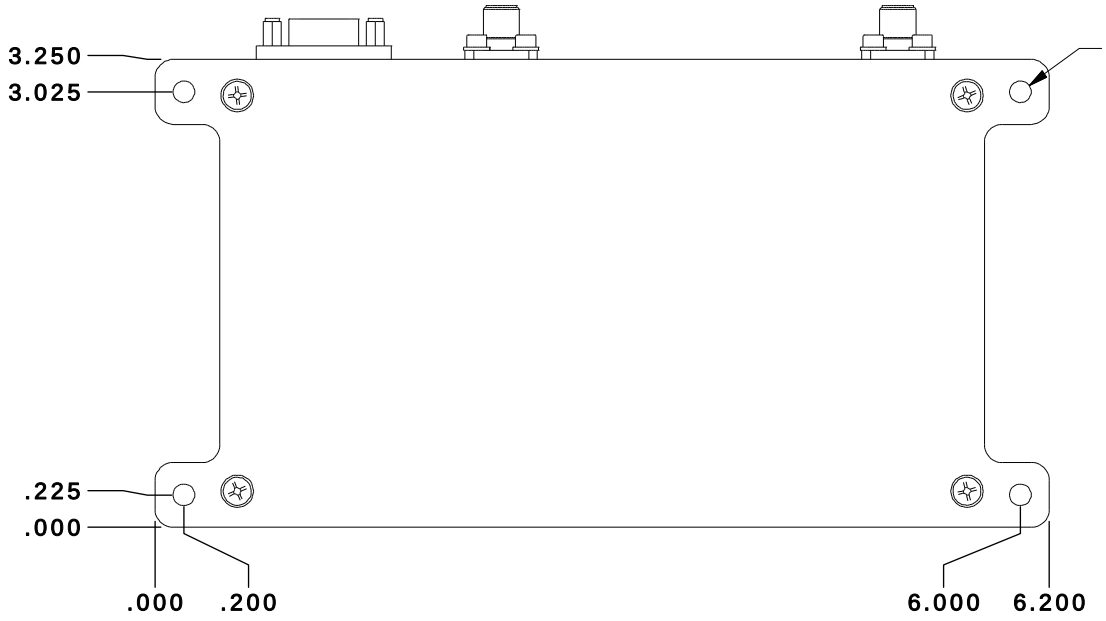
SIZE	DWG NO.	REV
A	OL_103	0

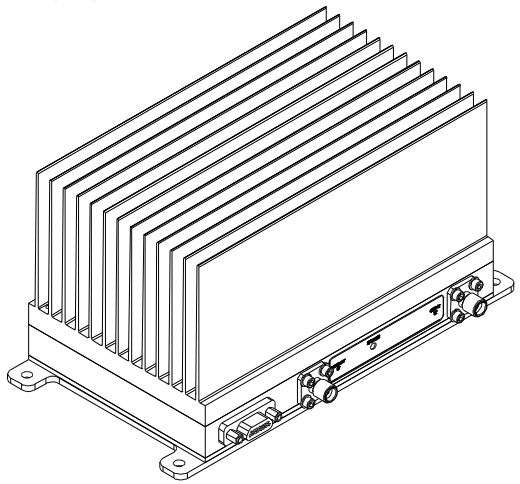
SCALE: NONE	CAGE CODE 67DZ3	SHEET 1 OF 3

OPTIONAL HEATSINK

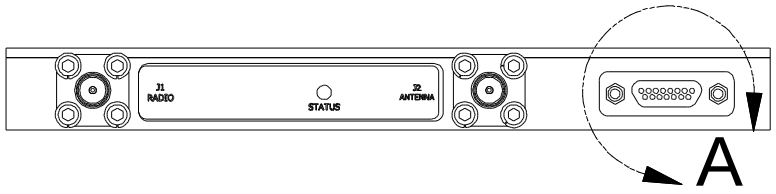




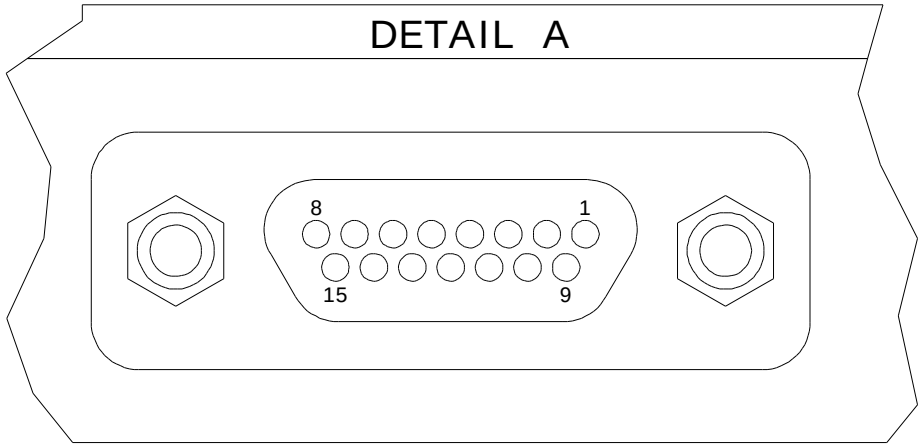




DRAWN	DMC	10/3/2013	HOUSING OUTLINE DRAWING 103		
DESIGNED	DMC	6/10/2015			
CHECKED			SIZE A	DWG NO. OL_103	REV 0
ENG APPROVED					
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 2 OF 3



DETAIL A



CONNECTOR PINOUT				
PIN	FUNCTION	TTL HIGH	TTL LOW	NOTES
1-4	+VDC	-	-	SUPPLY VOLTAGE - RANGE SPECIFIED IN DATA SHEET
5	SIG. GND	-	-	RETURN FOR ALL SIGNAL AND CONTROL PINS
6	GAIN CNTRL	HIGH GAIN SETTING	LOW GAIN SETTING	3.3V TTL LOGIC INPUT (5V COMPATIBLE). HIGH GAIN DEFAULT WITH NO CONNECTION
7	STATUS	NORMAL OPERATION	ERROR CONDITION	3.3V TTL LOGIC OUTPUT
8	TEMP	-	-	ANALOG TEMPERATURE SENSOR OUTPUT*
9-12	GND	-	-	DC RETURN
13-14	NC	-	-	NOT USED - NO CONNECTION WITHIN AMP
15	TX/RX CNTRL	SSPA IN TX MODE (LNA OFF, PA ON)	SSPA IN RX MODE (LNA ON, PA OFF)	3.3V TTL LOGIC INPUT (5V COMPATIBLE). ACTIVE ONLY IF MANUAL SWITCHING IS FITTED

NOTES:

1) P/N OF CONNECTOR ON AMPLIFIER: ITT MDM-15PSB.
MATES WITH ITT MDM-15PH006B OR EQUIVALENT.

2) EQUATION TO CALCULATE AMP TEMPERATURE:
(VOLTAGE READ - 0.5V) x 100 °C.

DRAWN	DMC	10/3/2013
DESIGNED	DMC	9/6/2013
CHECKED		
ENG APPROVED		
MFG APPROVED		

HOUSING OUTLINE DRAWING 103

SIZE	DWG NO.	REV
A	OL_103	0

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