

## TA1178

### 20-520 MHz 10 W POWER AMPLIFIER

#### 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	High Speed On/Off Control
Over-Temperature Protection	Temp. Monitor Output
Optional Heatsink	

Specifications subject to change without notice. Typical performance at +28VDC +25°C, and in a 50Ω system.

RF / ELECTRICAL				
PARAMETER	MIN	TYP.	MAX	UNIT
Operating Frequency	20		520	MHz
PSat Power Output		+40.0		dBm
Gain		45.0		dB
Gain Flatness		1.0		dB <sup>1</sup>
Input Return Loss	-10	-12		dB
Operating Voltage	+27	+28	+30	VDC
Current Draw		2.0	2.2	A
Switching Time		1.0	2.0	μs

1 – Gain flatness recorded represents a peak-peak measurement across the **entire operating band**. Gain flatness is typically much lower across significant portions of this band. Consult the gain response plots for details if available.

## MECHANICAL

PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	6 x 3 x 0.793	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
DC / Control Connector	7W2 Male	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Weight	14	oz.
Weight with Heatsink	24	oz.

## ENVIRONMENTAL / PROTECTIONS

PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	+85	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	-2		dBm
PA Baseplate Shutoff Temperature	+ 85		°C

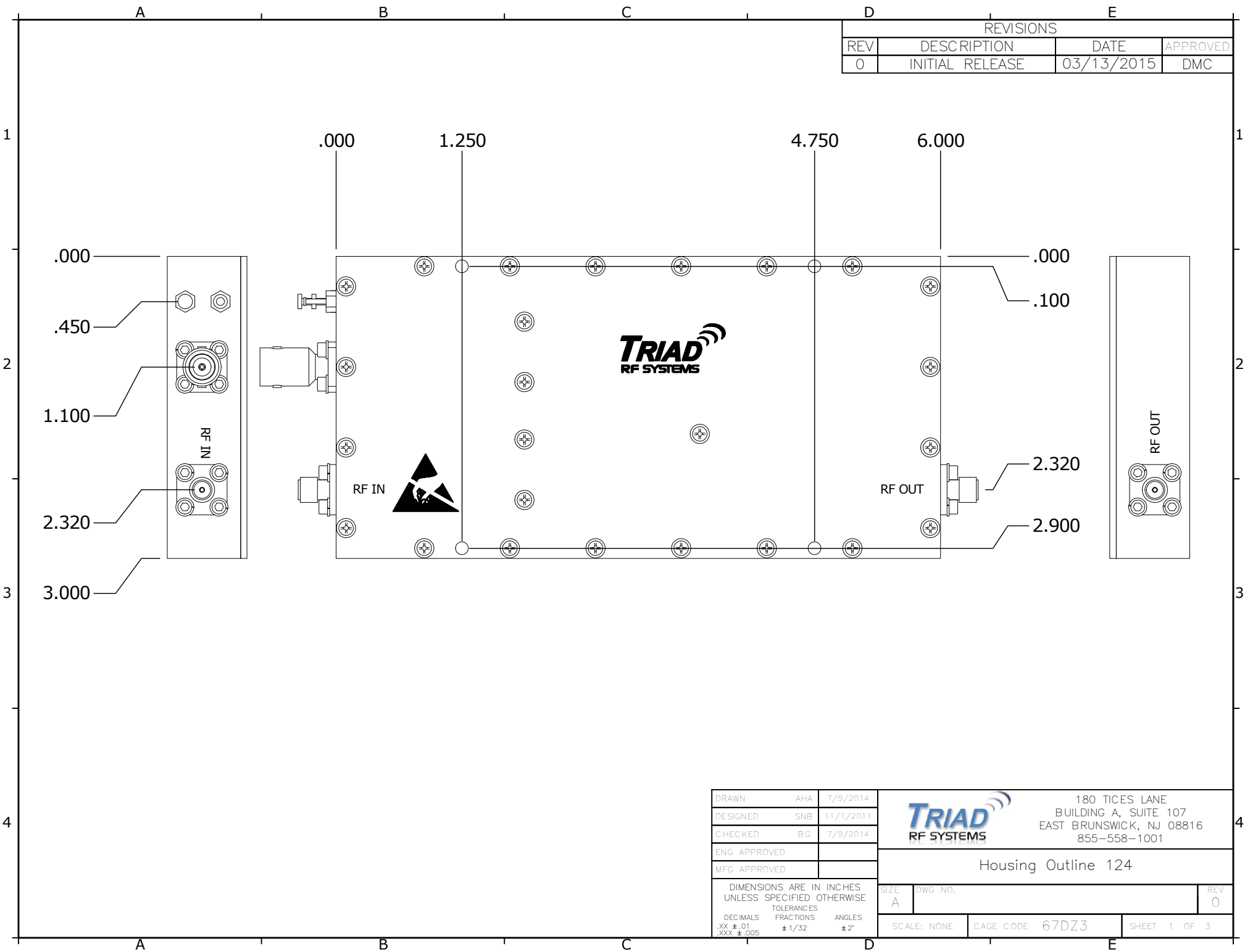
## INPUT/OUTPUT PINS

<b>AMPLIFIER CONNECTOR TYPE:</b>		7W2 MALE
<b>TRIAD CABLE PART NUMBER:</b>		CBL2
PIN NUMBER	LABEL	DESCRIPTION
A1	GND	Ground
1	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) *100
2	Amp Enable	TTL Hi or No Connection = Enable, TTL Lo = Disable
3	NC	Not Connected
4	GND	Ground
5	NC	Not Connected
A2	+VDC	Supply Voltage - Range Specified in Datasheet

## Configuration Options

Model Number	Description
TA1178	No Heat Sink Included
TA1178 – HS	Standard Heat Sink
TA1178 – HSF	Heat Sink with Integrated Cooling Fan
TA1178 – HSX	Custom Heat Sink Configuration
TA1178 – DOX	Custom Amplifier Configuration (issued by Triad upon customer request)

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	03/13/2015	DMC



DRAWN	AHA	7/9/2014
DESIGNED	SNB	11/1/2011
CHECKED	BG	7/9/2014
ENG. APPROVED		
MFG. APPROVED		

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

Housing Outline 124

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

A

B

C

D

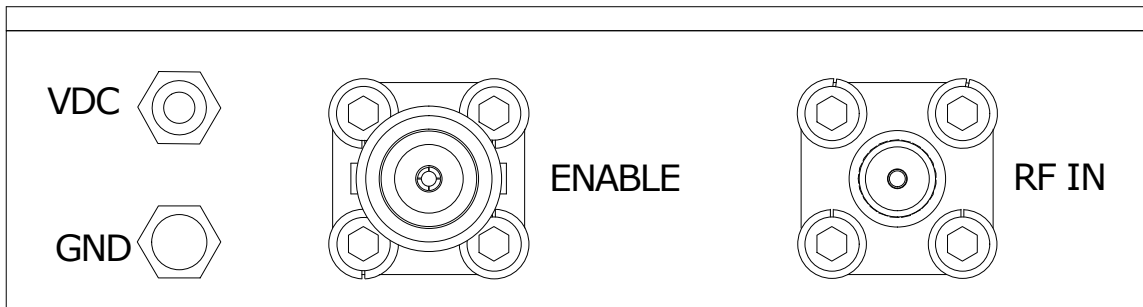
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1

2

2



3

3

CONNECTOR PINOUT		
PIN	FUNCTION	NOTES
1	+VDC	SUPPLY VOLTAGE - RANGE SPECIFIED IN DATASHEET
2	GND	Ground
3	Amp Enable	TTL On/Off Low=Enable, High=Disable

4

4

NOTES:

1. P/N OF CONNECTOR ON AMPLIFIER: Delta 105-000-N051

DRAWN	AHA	7/9/2014	Housing Outline 124		
DESIGNED	SNB	11/1/2011			
CHECKED	BG	7/9/2014	SIZE	DWG NO.	REV
ENG. APPROVED			A		0
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 2 OF 3

A

B

C

D

E

A

B

C

D

E

1

1

2

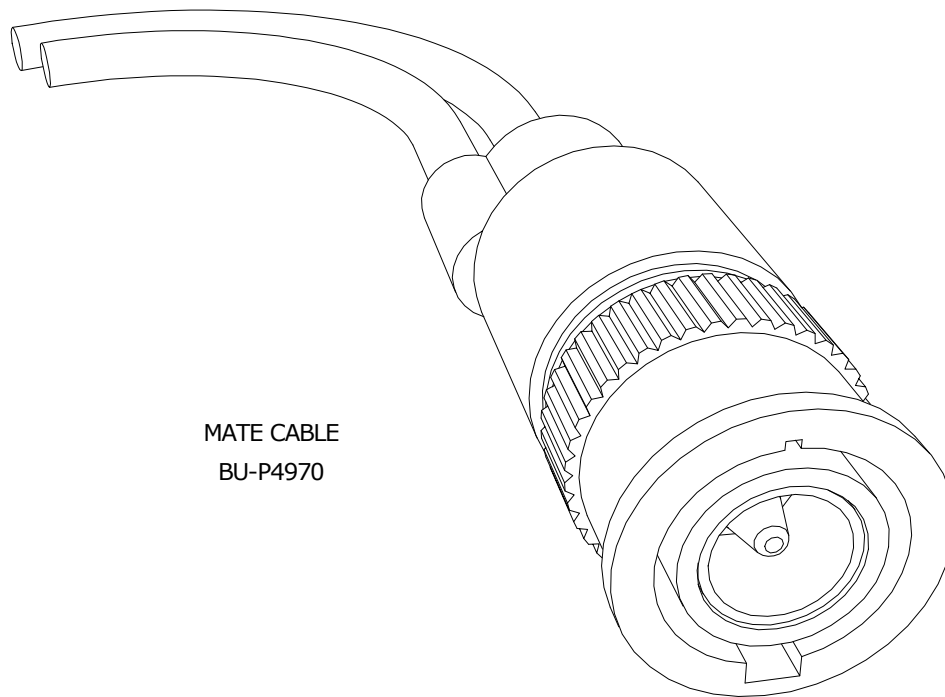
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4

4



MATE CABLE  
BU-P4970

NOTES:

- 1. P/N OF MATING CONNECTOR REQUIRED:  
MUELLER ELECTRIC CO BU-P4970 OR EQUIVALENT
- 2. WIRE DIAMETER: 20 AWG

DRAWN	AHA	7/9/2014	Housing Outline 124		
DESIGNED	Alpni	3/13/2015			
CHECKED	BG	7/9/2014	SIZE	DWG NO.	REV
ENG. APPROVED			A		
MFG APPROVED			SCALE: NONE	CAGE CODE 67DZ3	SHEET 3 OF 3

A

B

C

D

E