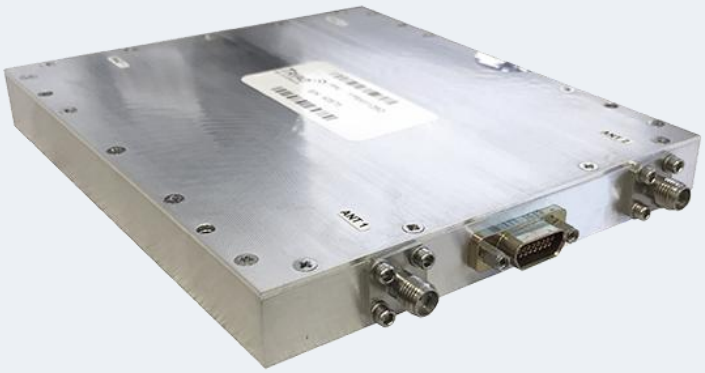


Description

The TTRM1126D-D02 2x2 Bi-Directional Amplifier is a class AB GaN module with an operating frequency range of 1800 to 2200 MHz. Designed for both military and commercial applications, this amplifier features an input voltage range of +27 to +30 VDC and a saturated RF output power of +43 dBm. With the capability of supporting any signal type and modulation format, all in a low-SWaP package, this unit is ideal for applications where high power-density, efficiency, and linearity are essential.

TTRM1126D-D02

TABLE OF CONTENTS

Features

- Temperature Monitor Output
- Over-Temperature Protection
- Amplifier Status Output
- Manual Tx/Rx Switching
- Under Voltage Protection

Applications

- Unmanned Systems
- Military or Commercial Radio Systems
- Long Distance High Data Rate ISR Links
- Vehicle Systems
- Fixed Site Infrastructure
- UAS, UGV, and USV Video/Data Links

CHARACTERISTICS & SPECIFICATIONS

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

Tx Specifications (Per Channel)

Parameter	Min.	Typ.	Max	Unit
Operating Frequency	1800	—	2200	MHz
64QAM Power Output 20 MHz BW, -27 dB EVM Limit	37	—	—	dBm
BPSK Power Output 20 MHz BW, -7 dB EVM Limit	43	—	—	dBm
Saturated Power Output CW Sweep at Design Limit	—	43	—	dBm
Small Signal Gain	24	27	—	dB
Small Signal Gain Flatness	—	—	1.5	dB (peak to peak)
Input Return Loss	—	—	-16	dB
Tx / Rx Switching Time	—	1	2	µS

Rx Specifications (Per Channel)

Parameter	Min.	Typ.	Max	Unit
Small Signal Gain	10	12	—	dB
Small Signal Gain Flatness	—	—	2	dB (Peak to Peak)
Noise Figure	—	3	4	dB
Input Return Loss	—	—	-10	dB

Power Supply Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	27	28	30	VDC	—
RMS Operating Current Draw (Idle)	—	—	0.3	A	28VDC Supply Voltage, Idle in Receive Mode
RMS Operating Current Draw (64QAM Power Output)	—	—	1.8	A	28VDC Supply Voltage, 802.11 WLAN Signal
RMS Operating Current Draw (BPSK Power Output)	—	—	2.5	A	28VDC Supply Voltage, 802.11 WLAN Signal

CHARACTERISTICS & SPECIFICATIONS (CONT.)

Specifications subject to change without notice.

Mechanical Specifications

Parameter	Value	Unit	Notes
Dimensions (L x W x H)	5.1 x 4.4 x 0.6 (129.5 x 111.8 x 15.2)	in (mm)	—
Cooling	Baseplate Conduction	—	—
Weight	16 (454)	oz (g)	—

Interface Specifications

Parameter	Value	Notes
RF Connectors (Input / Output)	SMA-F / SMA-F	—
Power / Signal Connector	MDM-15SH034B	Connector appearing on unit (Manufacturer P/N)
Mating Connector	M83513/03-B03C	Mating connector required for interfacing (Manufacturer P/N)
Test Integration Cable	CBL44	Triad P/N available for purchase separately

Environmental Specifications

Parameter	Min.	Max	Unit
Operating Temperature (Housing Temp.)	-40	85	°C
Storage Temperature	-55	85	°C
Altitude	0 (0)	30000 (9144)	ft. (m.)
Ingress Protection Rating	IP54		—
Shock / Vibration	Designed to comply with MIL-STD-810 Shock / Vibration Test Methods		—

Protections & Maximum Ratings

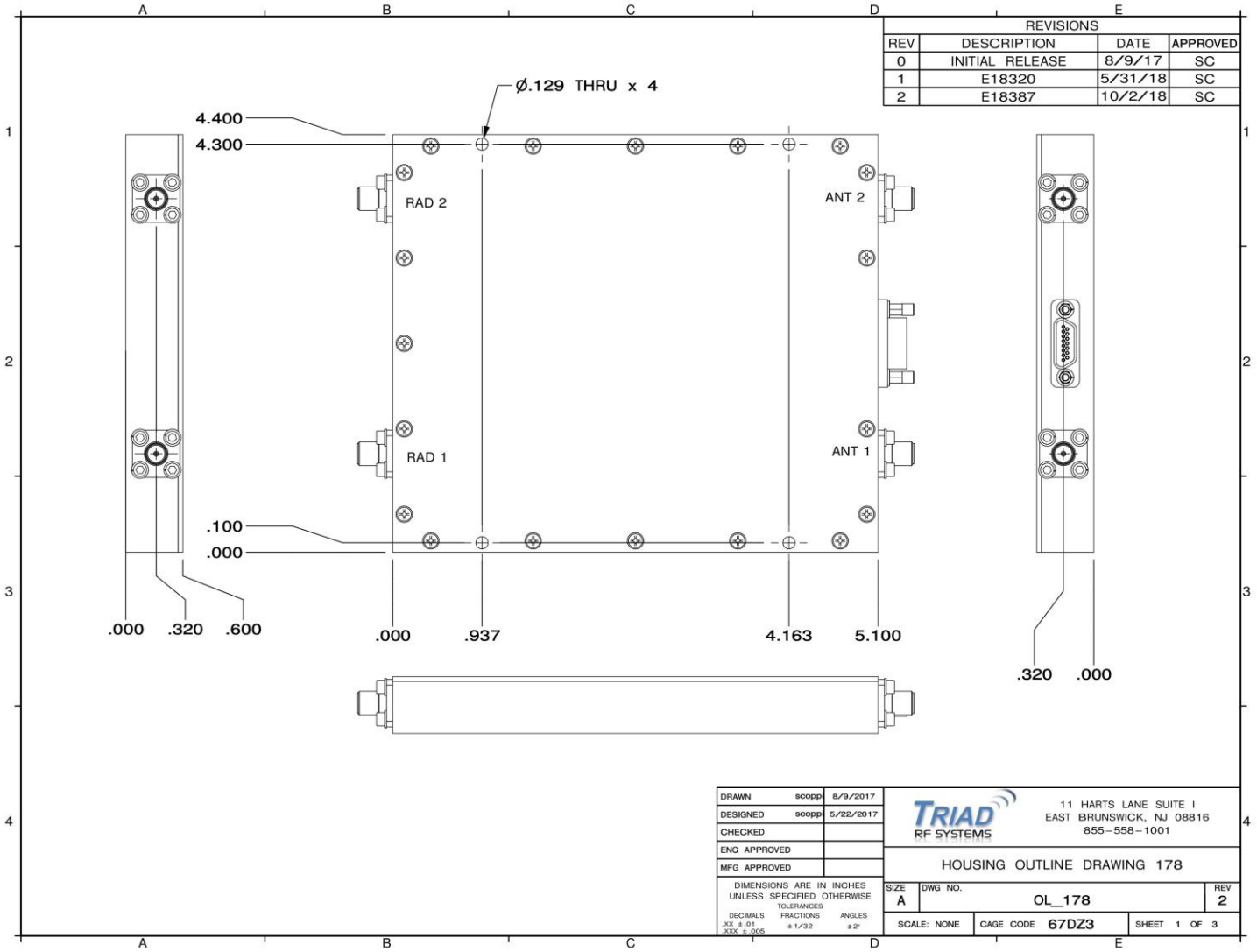
Parameter	Value	Unit	Notes
Maximum RF Input (Per Channel)	21	dBm	CW Power
Over Temp Protection Trip Level	85	°C	Internally Monitored System Temperature
RF Output Open Load Survivability	42	dBm	CW with Open Circuit at Antenna Port

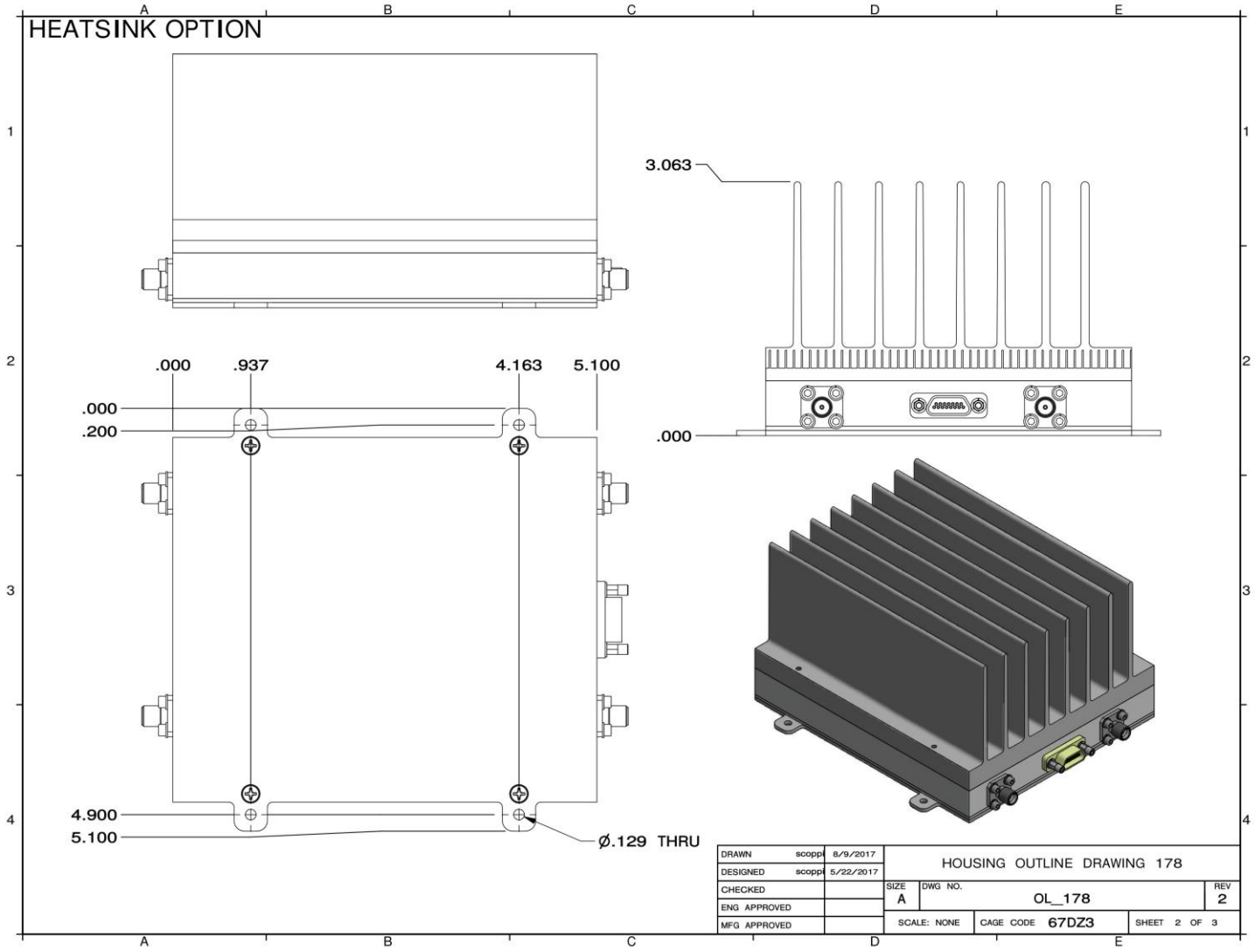
DC / CONTROL CONNECTORS

Input / Output Pins

TTRM Connector Part Number			Mating Connector Part Number	
MDM-15SH034B			M83513/03-B03C	
Pin	**Label**	**Type**	**I/O**	**Notes**
1	Vin	Power	N/A	Supply Voltage
2	Vin	Power	N/A	Supply Voltage
3	Vin	Power	N/A	Supply Voltage
4	Vin	Power	N/A	Supply Voltage
5	SIG GND	Signal	N/A	Signal Ground
6	N/C	N/A	N/A	NOT CONNECTED
7	STATUS	Signal	Output	Amplifier Status TTL HIGH = Normal Operation TTL LOW = Error Condition
8	TEMP	Signal	Output	Temp Monitor Temp in DegC = (Vout - 0.5V) * 100
9	GND	Power	N/A	Power Supply Return
10	GND	Power	N/A	Power Supply Return
11	GND	Power	N/A	Power Supply Return
12	GND	Power	N/A	Power Supply Return
13	N/C	N/A	N/A	NOT CONNECTED
14	N/C	N/A	N/A	NOT CONNECTED
15	Tx/Rx	Signal	Input	Manual Switching TTRM: TTL High = Tx Amp Enabled TTL Low = Rx Amp Enabled Automatic Switching TTRM: Pin not required. Do not use.

MECHANICAL DRAWING

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HOUSING OUTLINE DRAWING 178
SIZE A
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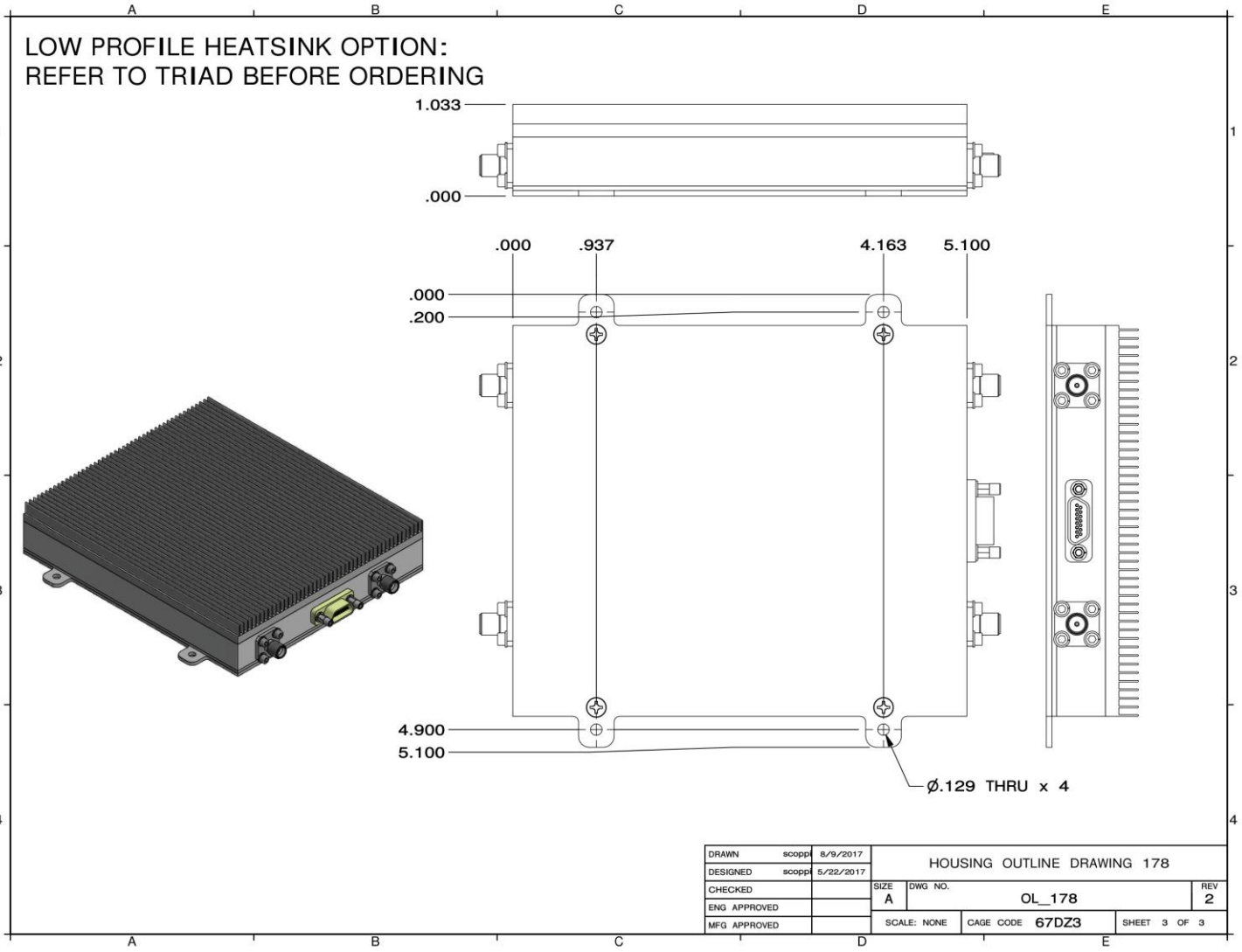
REV 2
SCALE: NONE
CAGE CODE 67DZ3
SHEET 2 OF 3


LOW PROFILE HEATSINK OPTION:
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HOUSING OUTLINE DRAWING 178
SIZE A
DWG NO. OL_178
REV 2
SCALE: NONE
CAGE CODE 67DZ3
SHEET 3 OF 3