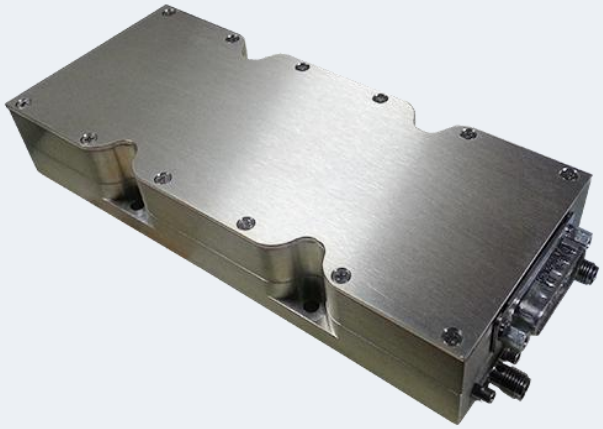


Description

This class AB GaN module is designed, and proven to be reliable, for Low Earth Orbit satellite applications. The TA1165 is capable of supporting any signal type and modulation format, including but not limited to DVB, DVB-DSNG, and DVB-S2. This unit is efficient, linear and lightweight.

The TA1165 has extensive flight heritage and proven performance in low earth orbit.

TABLE OF CONTENTS

Features

- Wide DC Voltage Input
- Over / Under / Reverse Voltage Protection
- Temperature Monitor Output
- Over-Temperature Protection

Applications

- Low Earth Orbit Downlink/Interlink Amplification
- DVB (and variants) Data Transmission

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	5500	—	8500	MHz
64QAM Power Output 20 MHz BW, -27 dB EVM Limit	33	—	—	dBm
BPSK Power Output 20 MHz BW, -7 dB EVM Limit	37	—	—	dBm
Saturated Power Output CW Sweep at Design Limit	—	43	—	dBm
Small Signal Gain	48	52.5	—	dB
Small Signal Gain Flatness	—	—	2	dB (peak to peak)
Input Return Loss	—	—	-14	dB
Tx Switching Time	—	1	2	µS

Power Supply Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	12	28	30	VDC	—
RMS Operating Current Draw (Idle)	—	0.63	—	A	VDC Supply Voltage, Idle in Receive Mode
RMS Operating Current Draw (64QAM Power Output)	—	2.1	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle
RMS Operating Current Draw (BPSK Power Output)	—	2.7	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle

Mechanical Specifications

Parameter	Value	Unit
Dimensions (L x W x H)	6 x 2.5 x 1.1 (152.4 x 63.5 x 27.9)	in (mm)
Cooling	Baseplate Conduction	—
Weight	17 (482)	oz (g)

CHARACTERISTICS & SPECIFICATIONS (CONT.)

Specifications subject to change without notice.

Interface Specifications

Parameter	Value	Notes
RF Connectors (Input / Output)	SMA-F / SMA-F	—
Power / Signal Connector	DA7W2PA00LF	Connector appearing on unit (Manufacturer P/N)
Mating Connector	DA7W2SA00LF	Mating connector required for interfacing (Manufacturer P/N)
Test Integration Cable	CBL21	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	Low Earth Orbit (LEO)		ft. (m.)
Ingress Protection Rating	IP54		—
Shock / Vibration	Designed to comply with MIL-STD-810 Shock / Vibration Test Methods		—

Protections and Maximum Ratings

Parameter	Value	Unit	Notes
Maximum RF Input (Per Channel)	-11	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

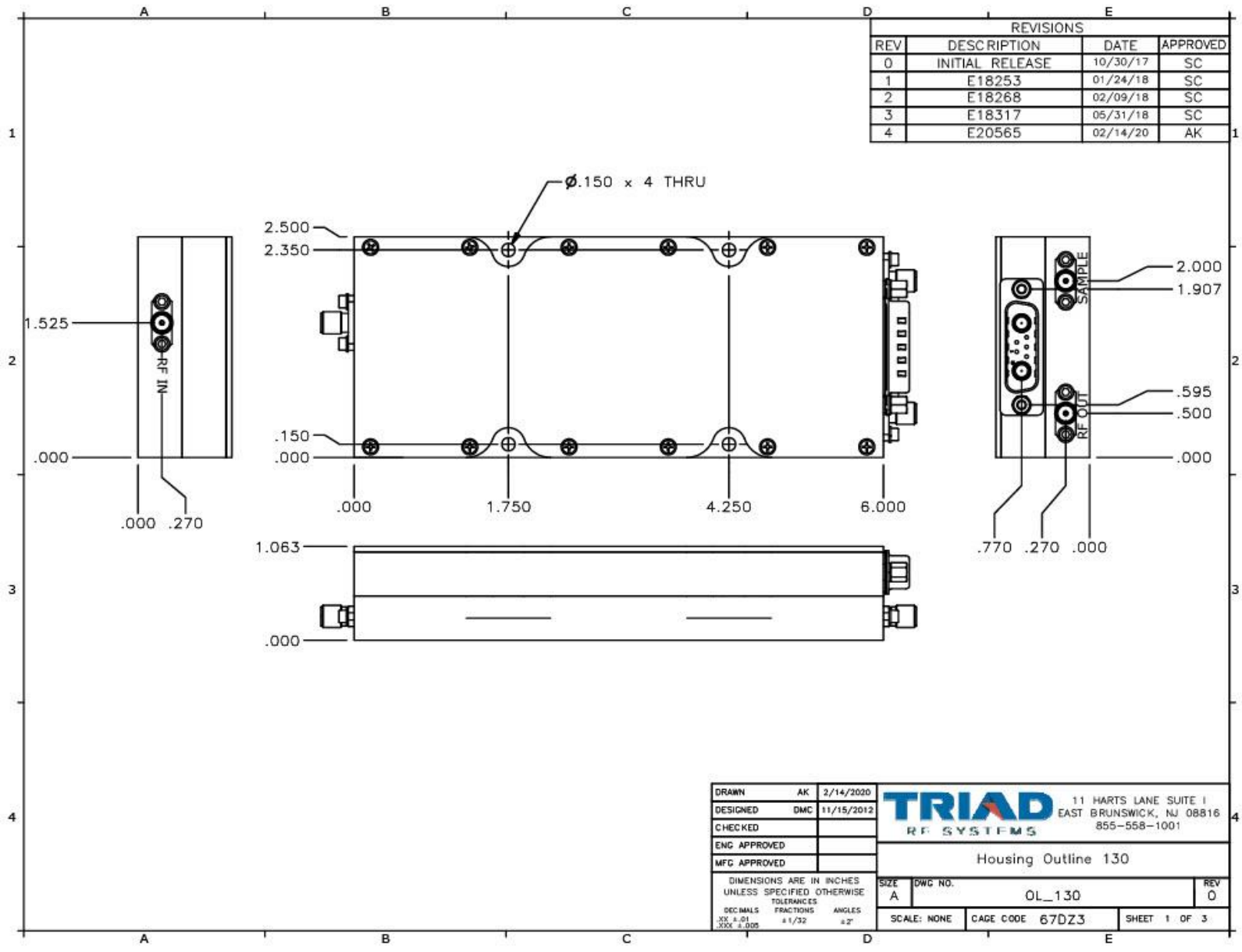
DC / CONTROL CONNECTOR

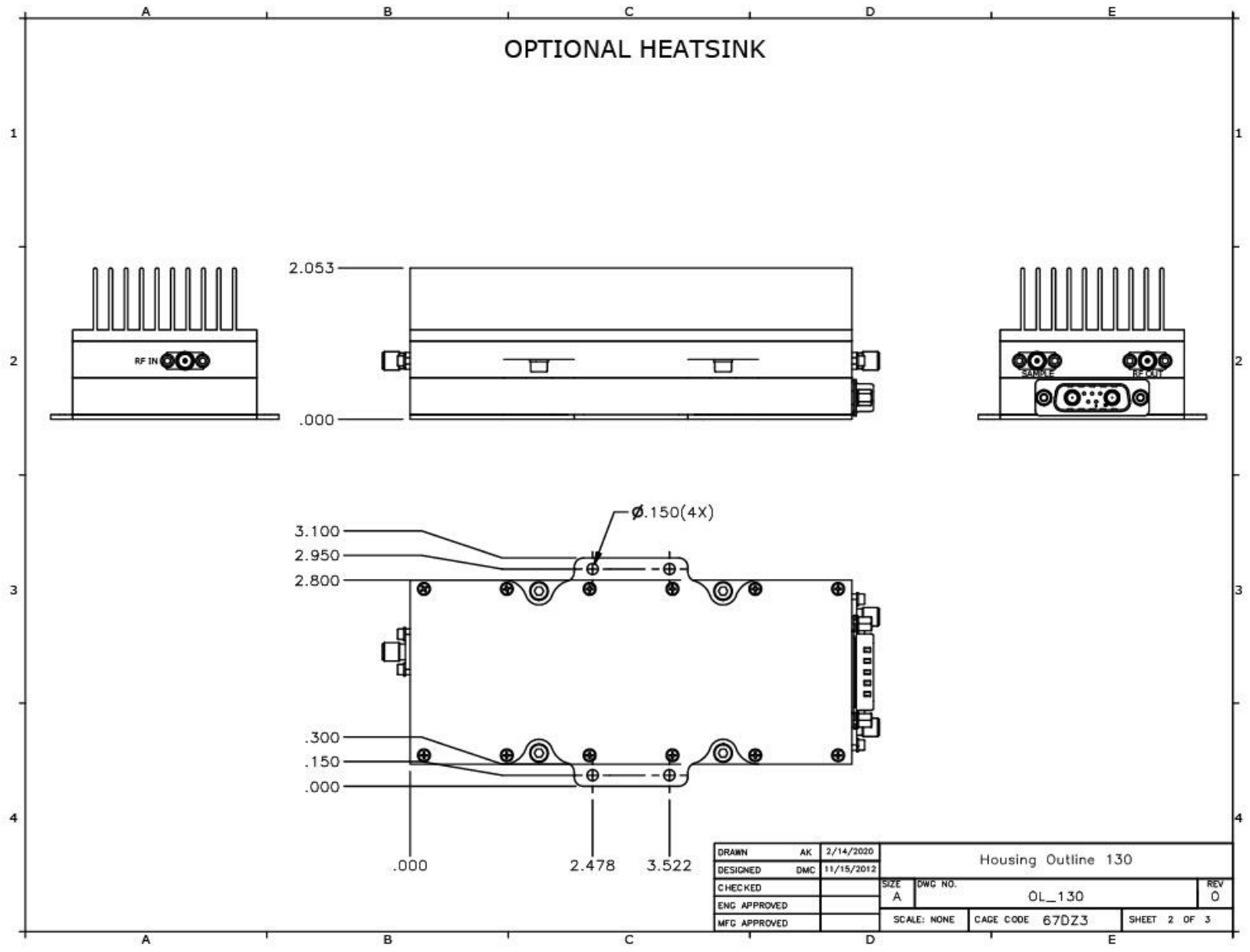
Input and Output Pins

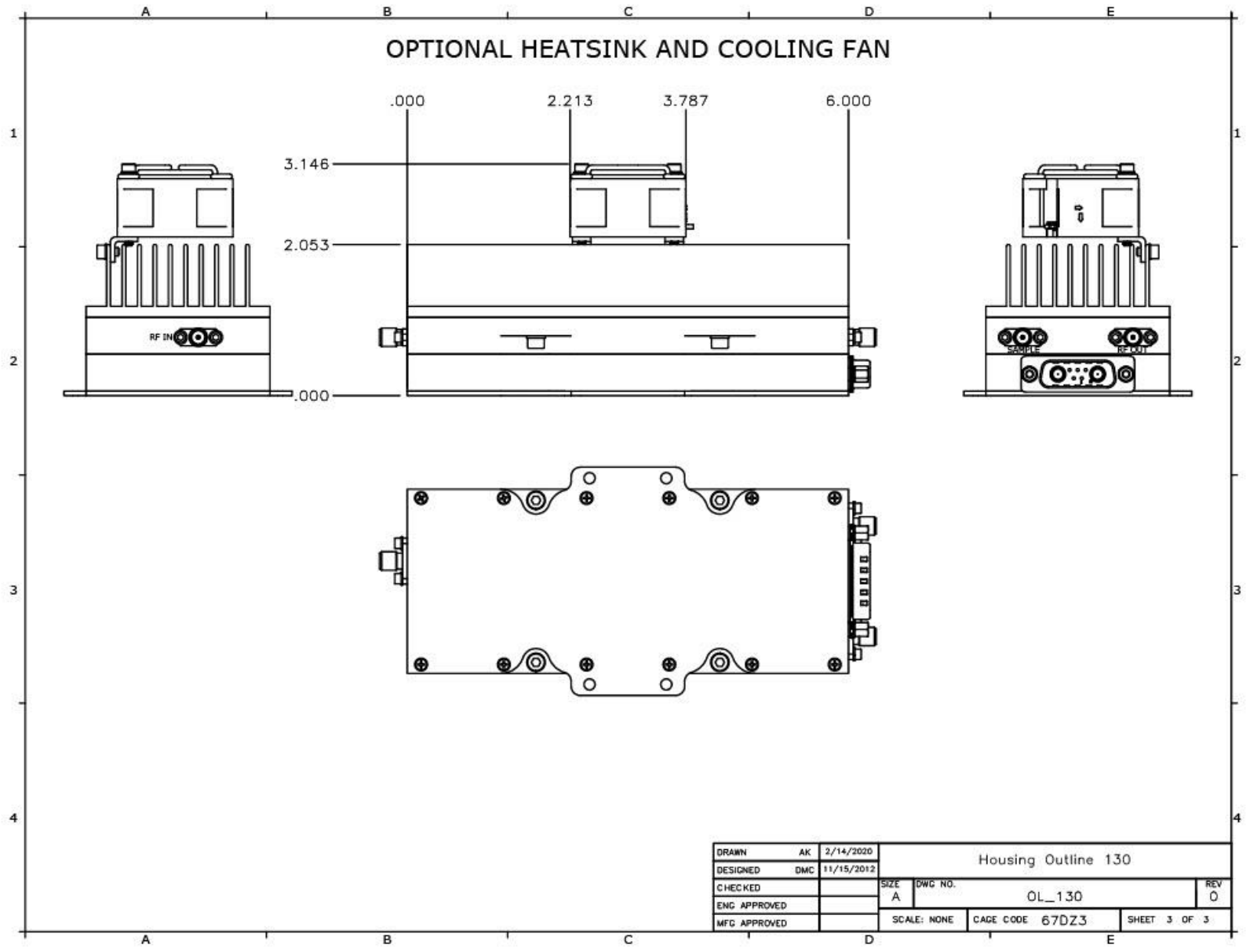
TA Connector Part Number			Mating Connector Part Number	
DA7W2PA00LF			DA7W2SA00LF	
Pin	**Label**	**Type**	**I/O**	**Notes**
A1	GND	Power	Input	Supply Voltage Return (Ground)
A2	Vin	Power	Input	Supply Voltage - Range Specified in Data Sheet
1	TEMP	Signal	Output	Temp Monitor Temp in DegC = (Vout - 0.5V) * 100
2	ENABLE	Signal	Input	TTL High or No Connection = Enable TTL Low = Disable
3	N/C	N/A	N/A	Not Connected
4	SGND	Signal	N/A	Signal Ground
5	N/C	N/A	N/A	Not Connected

Note: All +VDC and GND pins should be populated as shown.

MECHANICAL DRAWING




OPTIONAL HEATSINK
RF IN
2.053
.000
SAMPLE
RF OUT
Ø.150(4X)
3.100
2.950
2.800
.300
.150
.000
.000
2.478
3.522
DRAWN AK 2/14/2020
DESIGNED DMC 11/15/2012
CHECKED
ENG APPROVED
MFG APPROVED
Housing Outline 130
SIZE A
DWG NO. OL_130
REV 0
SCALE: NONE
CAGE CODE 67DZ3
SHEET 2 OF 3


OPTIONAL HEATSINK AND COOLING FAN
.000
2.213
3.787
6.000
3.146
2.053
.000
RF IN
SAMPLE
RF OUT
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ENG APPROVED
MFG APPROVED
Housing Outline 130
SIZE A
DWG NO. OL_130
REV 0
SCALE: NONE
CAGE CODE 67DZ3
SHEET 3 OF 3