

**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    | 5000 |       | 5300 | MHz  |
| P1dB Power Output      |      | +40.0 |      | dBm  |
| Gain                   | 22.0 | 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   |      | 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   |

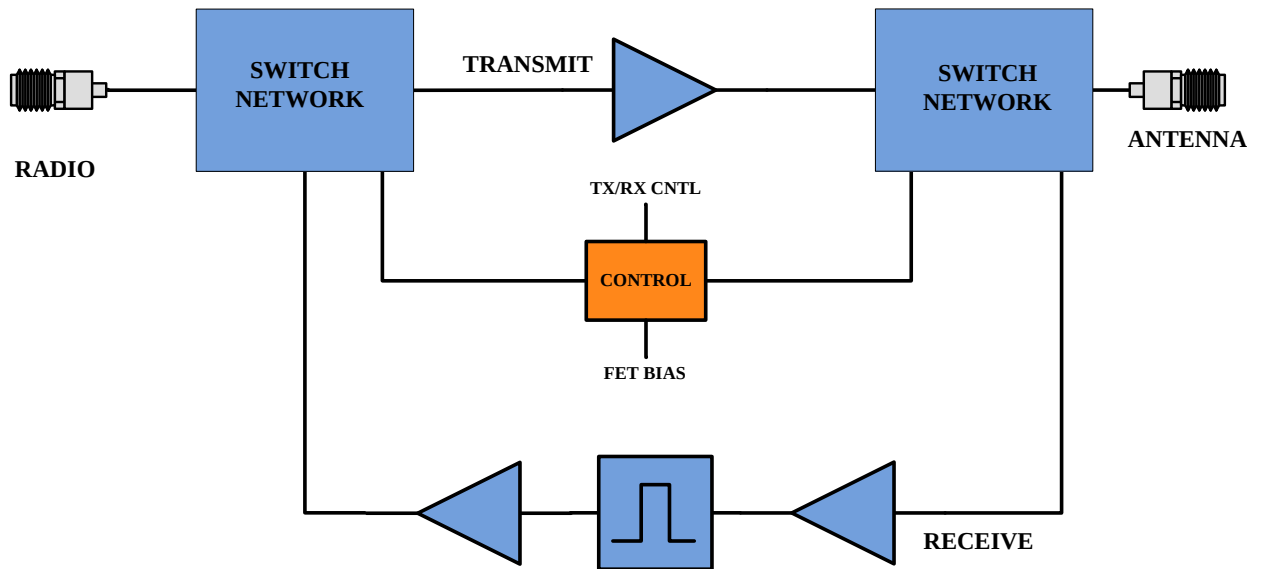
| MECHANICAL                     |                                                    |      |
|--------------------------------|----------------------------------------------------|------|
| PARAMETER                      | VALUE                                              | UNIT |
| Dimensions (L 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                 |

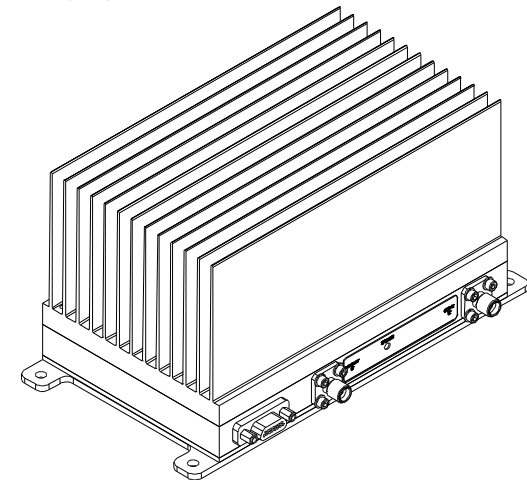
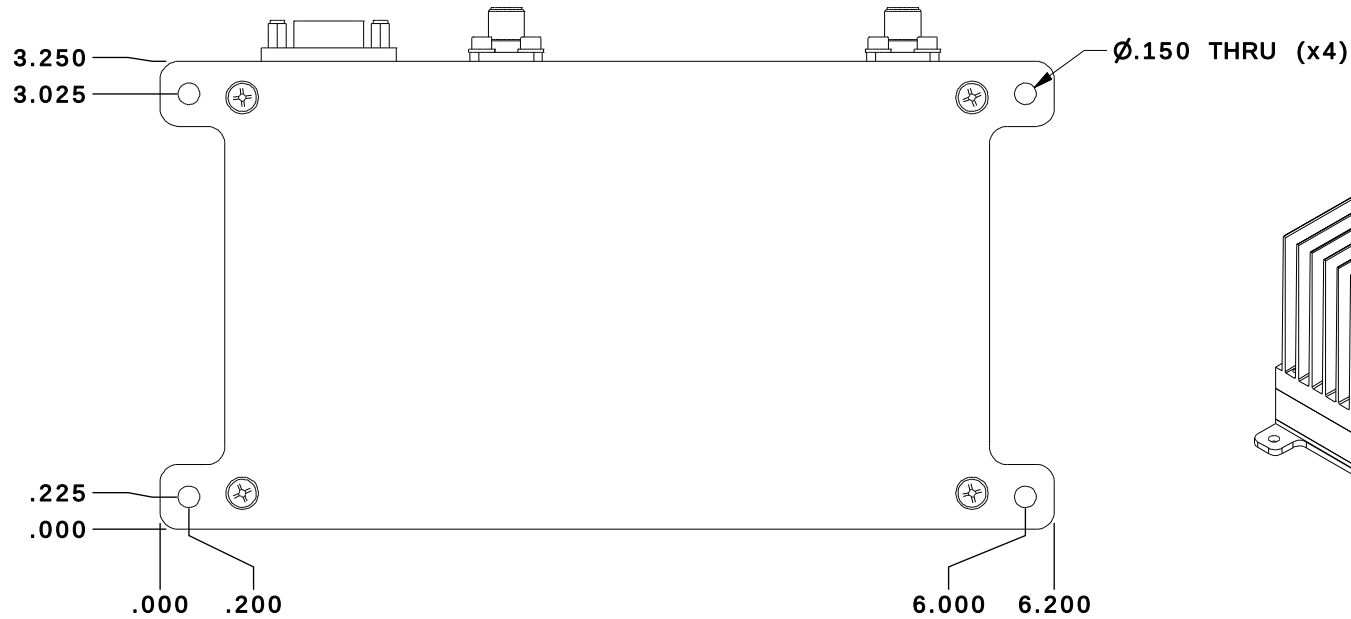
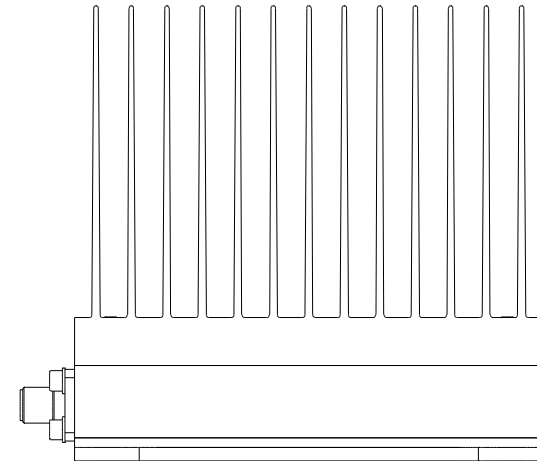
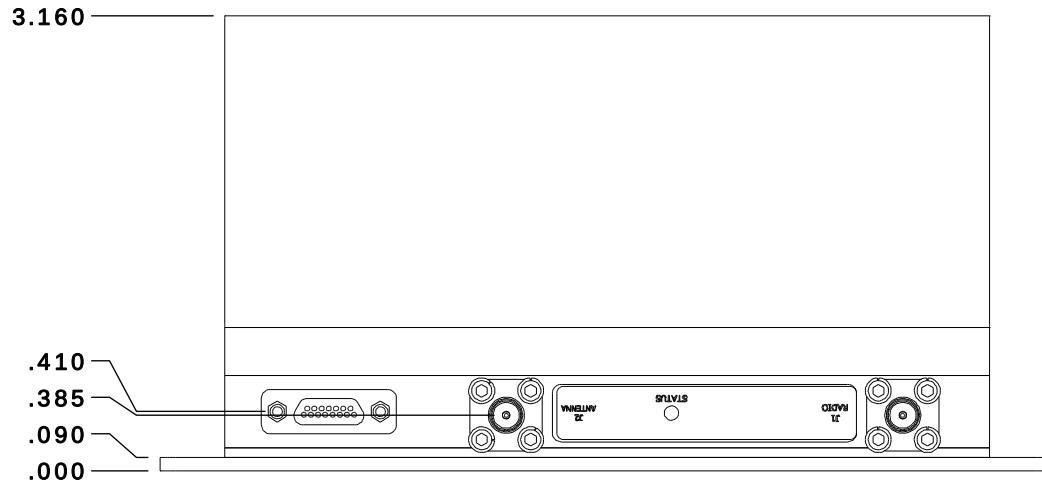
| DATA RATE VS. OUTPUT POWER |          |
|----------------------------|----------|
| OFDM MODULATION            | POut (W) |
| 64QAM OFDM                 | 2.5      |
| 16QAM OFDM                 | 6.3      |
| QPSK                       | 4.0      |
| BPSK                       | 10.0     |

See our [application note](#) that describes how this table was calculated and provides notes on in-system performance

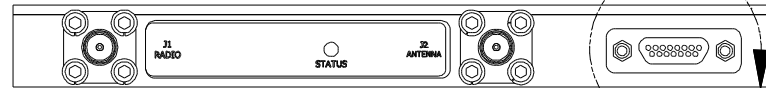




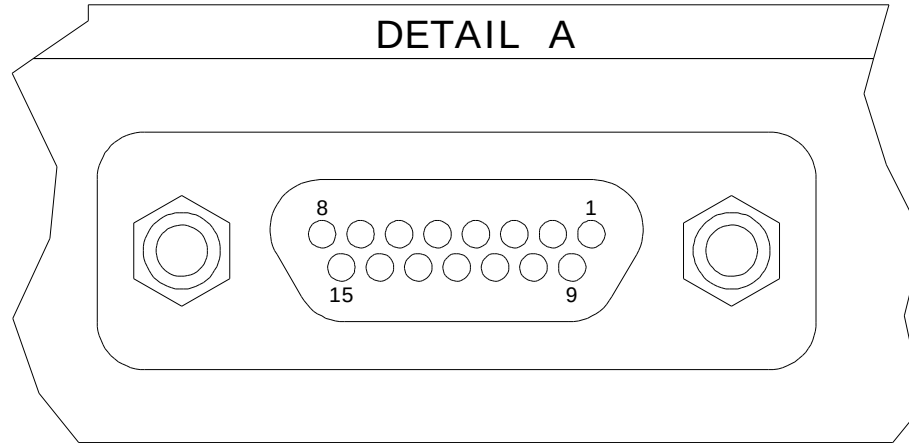
# OPTIONAL HEATSINK



|              |     |           |                             |                 |              |
|--------------|-----|-----------|-----------------------------|-----------------|--------------|
| DRAWN        | DMC | 10/3/2013 | HOUSING OUTLINE DRAWING 103 |                 |              |
| DESIGNED     | DMC | 6/10/2015 |                             |                 |              |
| CHECKED      |     |           | SIZE                        | DWG NO.         | REV          |
| ENG APPROVED |     |           | A                           | OL_103          | 0            |
| 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 | HOUSING OUTLINE DRAWING 103 |                 |              |
| DESIGNED     | DMC | 9/6/2013  |                             |                 |              |
| CHECKED      |     |           | SIZE                        | DWG NO.         | REV          |
| ENG APPROVED |     |           | A                           | OL_103          | 0            |
| MFG APPROVED |     |           | SCALE: NONE                 | CAGE CODE 67DZ3 | SHEET 3 OF 3 |