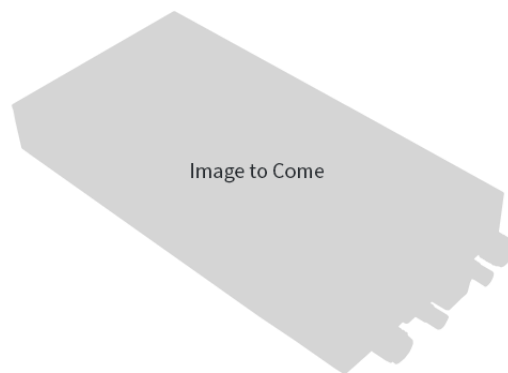


DESCRIPTION

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
- Over-Temperature Protection
- Optional Heatsink
- Tx / Rx Status Monitor
- Forward Power Measurement
- Temp. Monitor Output
- Manual or Automatic Tx/Rx Switching Available

Specifications subject to change without notice. Typical performance at +12VDC at 25°C in a 50Ω system

| TX SPECIFICATIONS (PER CHANNEL) | | | | |
|---------------------------------|------|-------|------|------|
| PARAMETER | MIN | TYP. | MAX | UNIT |
| Operating Frequency | 5000 | | 6000 | MHz |
| PSat Power Output | | +50.0 | | dBm |
| Gain | | 25.0 | | dB |
| Gain Flatness | | 1.0 | | ± dB |
| Input Return Loss | -15 | | | dB |
| Operating Voltage | +10 | +12 | +14 | VDC |
| Tx / Rx Switching Time | | 1.0 | 2.0 | uS |

| RX SPECIFICATIONS (PER CHANNEL) | | | | |
|---------------------------------|-----|-------|-----|------|
| PARAMETER | MIN | TYP. | MAX | UNIT |
| P1dB Power Output | | +5.0 | | dBm |
| Gain | | 10.0 | | dB |
| Gain Flatness | | | 1.0 | ± dB |
| Noise Figure | | 2.5 | | dB |
| OIP3 | | +15.0 | | dBm |
| Input Return Loss | -10 | | | dB |
| Current Draw | | 100.0 | | mA |

| MECHANICAL | | |
|--------------------------------|----------------------------------------------------|------|
| PARAMETER | VALUE | UNIT |
| Dimensions (L x W x H) | 0 x 0 x 0 | in |
| RF Connectors (Input / Output) | SMA-F / SMA-F | -- |
| DC / Control Connector | 21 Pin Micro-D | -- |
| Cooling | Baseplate Conduction - Optional Heatsink Available | -- |
| Mounting | 4-40 Thru Holes | -- |
| Weight | 0 | oz. |
| Weight With Heatsink | 0 | oz. |

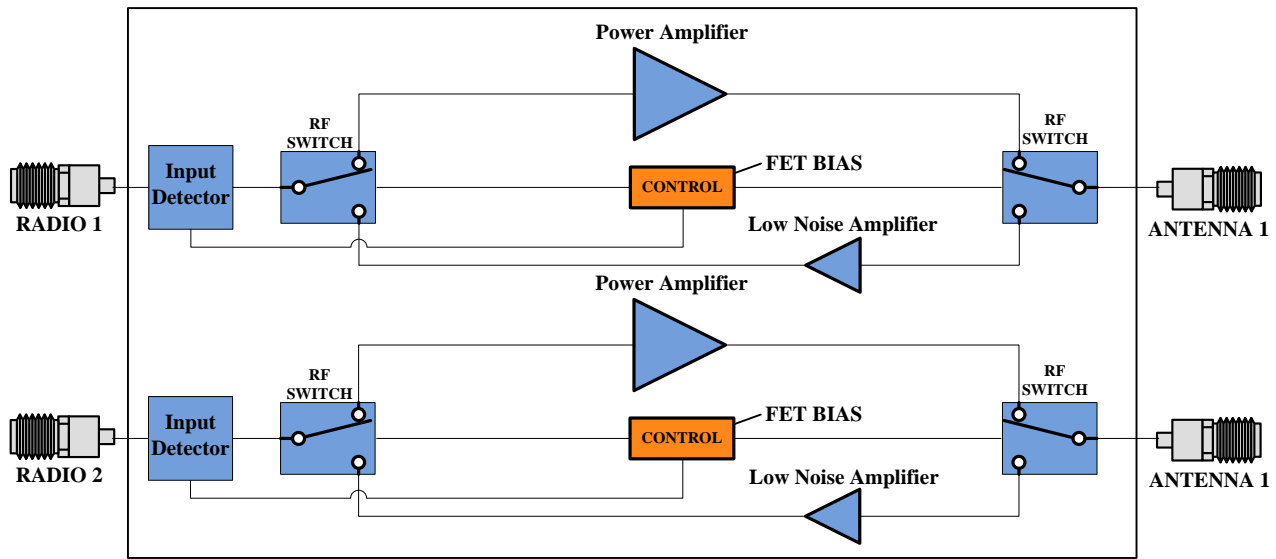
| ENVIRONMENTAL / PROTECTIONS | | | |
|----------------------------------|-----------------------------|-----|------|
| PARAMETER | MIN | MAX | UNIT |
| Operating Temp. (Housing Temp.) | -40 | +85 | °C |
| Humidity Range | 0-95 | | % |
| Altitude | 0-30,000 | | ft. |
| Shock / Vibration | MIL-STD-810 and equivalents | | -- |
| Max RF Input (Per Channel) | +17 | | dBm |
| PA Baseplate Shutoff Temperature | +85 | | °C |

| DC / CONTROL PINS | | |
|---------------------------|----------|---------------------------------------------------------------------|
| AMPLIFIER CONNECTOR TYPE: | | 21 PIN MICRO-D FEMALE |
| TRIAD CABLE PART NUMBER: | | CBL45 |
| PIN LABEL | NAME | DESCRIPTION |
| 1-3,12-13 | +VDC | Supply Voltage - Range Specified in Datasheet |
| 4 | FWD DET | Tx Amp RMS Power Detector |
| 5 | TEMP | Temp Monitor: Temp in DegC = (Vout - 0.5V) * 100 |
| 6 | RAD DET | Radio Input RMS Power Detector |
| 9-11,20-21 | GND | +VDC Supply Return |
| 7 | Status | BDA Status - TTL High = Normal Operation, TTL Low = Error Condition |
| 8 | Tx/Rx | TTL High or No Connection = Tx, TTL Low = Rx |
| 19 | SGND | Signal Ground |
| 14-18 | Reserved | Reserved for future use |

| 802-11G (20 MHz BW) DATA RATE VS. OUTPUT POWER (PER CHANNEL) | | | |
|--------------------------------------------------------------|-----------|---------------|----------|
| OFDM MODULATION | DATA RATE | POUT (W) MIN. | EVM |
| 64QAM | 54 Mbps | 20 | ≤ -27 dB |
| 16QAM | 36 Mbps | | ≤ -21 dB |
| QPSK | 12 Mbps | | ≤ -15 dB |
| BPSK | 9 Mbps | 100 | ≤ -7 dB |

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

High-Level Block Diagram



| Ordering Guide – Configuration Information | | |
|--------------------------------------------|------------------|------------------|
| Model Number | Amplifier Option | Heat Sink Option |
| TTRMXXXXD | - XXX | - XXX |

| Amplifier Options | | Heat Sink Options | |
|-------------------|------------------------------------------------------------------------|-------------------|---------------------------------------|
| Suffix | Description | Suffix | Description |
| D01 | Automatic Tx/Rx Switching | (none) | No Heat Sink Included |
| D02 | Manual Tx/Rx Switching | HS | Standard Heat Sink |
| DXX | Custom Amplifier Configuration (issued by Triad upon customer request) | HSF | Heat Sink with Integrated Cooling Fan |
| | | HSX | Custom Heat Sink Configuration |