High Power GaN Transmit/Receive Module

Solid State RF Amplifier System

Aethercomm Model Number TR 0.24-0.39-75 is a high power, RF transmit/receive system that operates from 290 MHz to 390 MHz minimum and is packaged in a compact, rugged enclosure. This TR module transmits from 290 to 390 MHz with an output power of 100 watts typical. Receive frequencies are 240 to 270 MHz and this RF module offers 3.0 dB of noise figure with ~ 18 dB of gain. This transmit assembly is designed and manufactured for operation in harsh environments where communication systems are deployed. The design offers high power added efficiency in Tx mode. Nominal input power is 2.0 watts but any input power range can be amplified as this module offers a very large dynamic range. Input and output VSWR is 2.0:1 maximum. This unit is equipped with DC switching circuitry that enables and disables the Tx and Rx functions in less than 10uSecs. Standard features include reverse polarity protection and output short and open circuit protection. This RF transmit amplifier operates from a +18 to +36 Vdc power supply. This TR Module operates from -40C to +71C base plate temperature. The system is operated in both pulsed and CW modes.

This high power transmit/receive subsystem is employed in high shock and vibration environments. Standard housing size is approximately 3.700(w) by 8.125(l) by 1.000(h) inches. A SMA female connector is standard on the antenna port and on the Tx in/Rx out ports. DC and logic connections are accessible via a DSUB connector. Typical test data appears on page two of this data sheet at room temperature. For mounting and heat sink instructions, further test data or operation and logic and pin out requirements, please contact the factory.

- **Operation across 290 to 390 MHz Minimum**
- **Transmit from 290 to 390 MHz; Rx from 240 to 270 MHz**
- **Tx Output Power of 100 Watts typ**
- **Rx Noise Figure is 3.0 dB typical with 18 dB of gain**
- **18 to 36 Vdc Input Voltage**

This is an example of an Aethercomm standard product. Aethercomm designs and manufactures high performance, high power CW or pulsed SSPA's for commercial, military and satellite communications customer.

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TR 0.24-0.39-75 Typical Transmit Performance from 290 to 390 MHz @ 25° C with a CW Input Stimulus at a Constant Pin of 34 dBm

Freq (MHz)	Pout for Pin = 2.0 Watts (dBm)	Current with Pin = 2.0 Watts from a +24 Vdc Supply (Amps)
290	49.6	11.22
295	49.7	11.34
300	49.7	11.46
305	49.8	11.58
310	49.9	11.66
315	49.9	11.69
320	49.9	11.71
340	50.2	11.99
350	50.3	12.07
360	50.4	11.95
370	50.2	11.89
380	50.1	11.23
390	50.0	10.65