



High Power Pulsed L Band T/R Module

Aethercomm P/N TR 1.35-1.45-20 is a high power transmit/receive module used in the Multi-Service Target Control System Data Link Transmitter. This TR module operates over the Military L Band Frequency Range and provides TDMA data communications of time-space-position information between aircraft and ground stations. The system operates in transmit or receive mode at any given time but not simultaneously. Typical transmit duty cycles do not exceed 50%. In Rx mode, the module provides a low noise front-end that includes band limited filtering, a high power limiter, low-noise amplification and image rejection filtering. In the Tx mode, the module amplifies a low level, L Band signal up to a power level of greater than 20 watts at the antenna. The antennal port offers a bi-directional interface to the Rx and Tx sections of the module. This unit is fully GPS compliant. Standard features include forward power monitoring, reflected power monitoring, output short and open circuit protection, over and under voltage protection, receiver protection, very fast switching speeds between Rx and Tx operation and a fully regulated DC-DC converter. This unit operates from +28Vdc, -28Vdc and +10Vdc power supplies and can survive

Transmit Section Operational Performance

Parameter	Min	Typ	Max
Peak Output Power (Watts)	20	25	NA
RF Output Power Droop (dB)	0.20	0.30	0.50
Tx Input Return Loss (dB)	-20.0	-12.0	-9.8
Duty Cycle (%)	20	50	100
Harmonics (dBc)	-100	-70	-63
Non Harmonic Spurs (dBc)	< -100	< -90	< -80
+28Vdc Current at Pout = 20 Watts (Amps)	1.50	1.70	1.75
Rejection at 1282 and 1522 MHz (dB)	50	60	NA
Rx to Tx Switching Time (uSec)	56	60	68
NPD @ GPS L1 and L2 (dBm/Hz)	-158	-154	-150

- High power, L band transmit/receive module
- Tx minimum output power = 20 watts @ 25C
- Rx typical noise figure = 2.0 dB
- Transmit pulse widths of 9 mSecs at a 50% DC
- Fully GPS compatible



temperatures of 95C base plate before the unit shuts off with over-temperature protection. This high performance module is enclosed in a very compact 4.0" by 8.0" by 1.7". It is environmentally sealed and can be withstand immersion in water.

Receive Section Operational Performance

Parameter	Min	Typ	Max
Average Input Power - No Damage (dBm)	NA	NA	30
Noise Figure (dB)	1.5	2.0	2.5
Rx Input Return Loss (dB)	-20	-14.9	-9.8
Rx Gain (dB)	22.5	23.0	23.5
OIP3 (dBm)	28	30	32
P1dB (dBm)	18	20	22
Rejection at 1282 and 1522 MHz (dB)	50	60	NA

Aethercomm Inc. reserves the right to make changes without further notice. Aethercomm recommends that before these items herein are specified into a system or critical application that the performance characteristics be verified by contacting the factory.