

DESCRIPTION

The TTRR1086 was designed for a CubeSat ground station application. It contains two redundant bi-directional amplifier sections that are capable of over 100W Tx power per channel. A user-selectable 3-section switched filter bank is also incorporated on the Tx and Rx paths. The unit also features forward and reflected power monitoring on each channel and internal limiter modules for protecting the receive paths from up to 2W of input power.



FEATURES

- AC, DC or Dual Power Supplies
- Forward and Reflected Power Monitoring
- PA and System Redundancy Configurations
- High Speed Tx/Rx Switching

Tx SPECIFICATIONS				
PARAMETER	MIN	TYP	MAX	UNIT
Operating Frequency Range	400		450	MHz
PSat Power Output		50		dBm
Gain		36		dB
Gain Flatness (Entire operating band)		1		dB
Input Return Loss		-14		dB
AC Supply Voltage	+85		+264	VAC
AC Supply Frequency	47		63	Hz
Tx/Rx Switching Time		1.0	2.0	uS

Rx SPECIFICATIONS				
PARAMETER	MIN	TYP.	MAX	UNIT
P1dB Power Output		12		dBm
Gain		14		dB
Gain Flatness			1	± dB
Noise Figure		2	2.5	dB
Input Return Loss		-12		dB

MECHANICAL		
PARAMETER	DESCRIPTION	UNIT
Dimensions (L x W x H)	17 x 19 x 3.47 (2U EIA Rack Mountable)	in
RF Connectors (Input / Output)	N-Female standard on front or rear of rack Other configurations available upon request	--
Power Connector	IEC 60320-C14 standard Other connector types available upon request	--
Cooling	Forced air cooling standard Heat-pipes, fan-less, and liquid cooling configurations available depending on system requirements	--
Mounting	Panel mounting standard via 8-32 or 10-32 screws Rack slide rails and other configurations available	--

ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Ambient Operating Temp.	-10	+50	°C
Storage Temp Range	-60	+100	°C
Humidity Range	0-95		%
Altitude	0-50,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
EMI / RFI	Designed to comply with MIL-STD-461 and equivalents		--
Load VSWR @ P1dB	Open / Short Output Protection		--
Thermal Protection	User-configurable alarm / shutdown		--

CONTROL / MONITORING STANDARD FEATURES AND OPTIONS	
FEATURE / OPTION	DESCRIPTION
Forward Power Monitoring	RMS power (modulation independent), peak power, or envelope detection available. The output can be configured to report power in dBm, Watts, VSWR, or any other format upon request (e.g. SNMP variable, TCP/IP or user-defined serial message)
Temperature Monitoring	Temperature sensors embedded in amplifier modules report system temperature to the front panel and to all communication interfaces in degrees C. Pre-programmed warnings can be set when internal temperatures approach thermal shut down temp. Options are also available to override thermal shut down if required.
Fan Status	Fan speeds and fan lock detect circuits are monitored by the internal SBC. Fan failure and/or blockage are reported to the front panel LCD and through any other communication interfaces that are equipped.
Amplifier Status Monitoring	Various amplifier parameters are monitored including operating voltage, current draw, transmit/receive status (for bi-directional units) and case temperature. Amp failure or any out of range parameters are reported to the front panel and through any other communication interfaces that are equipped.