

High Power Solid State UHF Power Amplifier

US1498



The CAP Wireless US1498 solid state ultra-high frequency (UHF) power amplifier is specifically designed to meet the demanding requirements of airborne environments. It provides outstanding efficiency, linearity, and power amplification, and its robust construction facilitates operation in thermally challenging settings. The dual input, single output design generates more than 100 watts per channel output across a frequency range of 290-320 MHz. The US1498 is packaged in an aluminum housing for customer-supplied forced air cooling, and incorporates digital attenuators on each channel that enable independent power control of each channel. The unit has been developed using laterally diffused metal oxide semiconductor (LDMOS) device technology, which provides protection against over temperature and poor voltage standing wave ratio (VSWR) and ensures reliability and robustness, high gain and operating efficiency.

Typical Applications

- UHF satellite communications
- Airborne and fixed location operations

Key Features

- Outstanding power efficiency
- Excellent linearity
- LDMOS device technology
- Min. 100 watts per channel or 250 watts single channel
- Lightweight aluminum housing
- Four bit digital attenuators for independent power control of each channel
- Wide range DC input
- Enhanced redundancy capability
- Dual input/single output for single or dual channel operation
- VSWR and high temperature alarm outputs
- AN/PRC 117(F) compatible
- Integrated output isolator for excellent impedance match and protection against poor VSWR

Parameters	Specifications	Note
Frequency range	290-320MHz	
Gain flatness	± 0.5dB	
Gain stability	± 0.5dB	
Gain	50dB min.	at Pin = 0dBm
Output power	100 watt average per channel	
Gain adjustment	15dB, 1dB per bit	
Number of RF inputs	2	
Impedance	50 ohms	
In/out VSWR	1.4:1	
Max RF input, no damage	+10dBm	
Harmonics (full power)	-30dBc max.	
Intermodulation products	-30dBc max.	Spacing: 1MHz @ 112w/tone/input
Power supply	22-32 volts DC	
Current	32 A max.	

MECHANICAL

Dimensions incl. heat sink	12.0 in. x 9.75 in x 3.22 in.	
Maximum weight	12.0 lbs.	
Finish	Chemical film Mil-C-5541	
Connectors	SMA(F) input, N(F) output	

ENVIRONMENT

Operating temperature	-40 to +50° C	Ambient air
Storage temperature	-45 to +75° C	
Cooling	Forced air, approx. 105 CFM	
Reliability (MTBF)	15,000 hours	
Operating altitude	0 to 20,000 ft.	
Operating humidity (non-condensing)	5% to 95%	
Shock	30G, 11mS half-sine pulse	

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