OTA-1000

WIDEBAND LOW NOISE PUSH-PULL AMPLIFIER

INSTRUCTION MANUAL

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INTRODUCTION

The OLSON TECHNOLOGY OTA-1000 is a high performance, wideband, low noise, push-pull general purpose amplifier with a built-in 90VAC to 240VAC power supply.

The OTA-1000 is completely self-contained and is configured in a small (2.5 x 2.7 x 1.5 inch) machined-aluminum housing. Holes are provided for optional mounting as may be required and this unit is powered through an industry-standard IEC-320 connector. A mating line cord is provided (USA standard 120VAC plug).

RF performance of the OTA-1000 is very good with CSO/CTB at >65dB below 77 output carriers at +40dBmV and additional digital loading from 550MHz to 870MHz at 6dB below these 77 carriers.

The OTA-1000 has a –20dB output test point and has no adjustments for gain or tilt. Frequency response is <± .75dB from 48MHz to 870MHz. Minimum gain to 1GHz is 22dB and this amplifier typically has a noise figure of less than 4.5dB.

Possible applications of the OTA-1000 are many, including use on the test bench, as a laser transmitter driver, distribution line or antenna amplification, etc.

OPERATION

1. Apply the input signal(s) and AC power to the OTA-1000.

2. Connect a spectrum analyzer or signal level meter to the output and verify that the output levels do not exceed the maximum ratings of the OTA-1000. If less than 77 channels are used with this amplifier, the output level can be increased. Use standard de-rating formulas to determine the maximum allowable output level based on the distortion specification for this unit and the number of channels in your application.

3. If the –20dB test point is used to test the output, or as an output, ensure that the main output is terminated in 75Ω.

SPECIFICATIONS

Input / Output Frequency	48MHz to 1GHz
Noise Figure	4.5dB typical
Minimum Gain	22dB (48MHz to 1GHz)
Gain Variation	<+ .75dB (48MHz to 870MHz)
Input / Output Return Loss	>15dB (48MHz 870MHz) >10dB (870MHz to 1GHz)
Output Test Point	-20dB
Test Point Return Loss	>15dB
I.M. Distortion	CSO / CTB >65dB below 77 output carriers at +40dBmV 54MHz to 550MHz. Digital loading at 6dB down from 550MHz to 870MHz.
Output Power For 1dB Gain Compression	+23dBm (typical)
RF Connectors	Type F - In, Out, Test
Power Connector	IEC 320 male receptacle
Power Requirements	90 VAC to 240 VAC @ 50-60Hz, 5 watts max.
Operating Temperature Range	-40°C to +60°C