

AM81RT Series

2 x 100W IMD Test Amplifier



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CONTENTS

- 1 Introduction**
- 2 Technical Specification**
- 3 RF Design**
- 4 Maintenance**
- 5 Warranty**
- 6 Mechanical Outline**

1 Introduction.

The AM81RT amplifier contains two class AB linear GaAs FET RF power modules which can be operated independently or simultaneously, each providing a minimum 100W RF output power. All types of RF input signals may be amplified including CW, modulated, or pulsed signals. The equipment is intended for use in 2 tone intermodulation measurement systems.

2 Technical Specification

2.1 Electrical

AM81-0.9S-45-50RT	700-960MHz
AM81-1.8-2.3-45-50RT	1800-2300MHz
AM81-2.3-2.7-45-50RT	2300-2700MHz
Small Signal Gain	45dB min
Gain Flatness	2dB p-p max
Absolute Maximum RF Input	+20dBm
CW Output Power @ 1dB GCP	+49.5dBm min
CW Output Power Saturated	+50dBm min, +50.5dBm typ
Harmonics @ P1dB	-40dBc typ
Non-Harmonic Spurious Output	-60dBc min
Noise Figure	6dB typ
Input Return Loss	14dB min, 17dB typ
Output Return Loss	14dB min, 17dB typ
RF Monitor	Digital front panel meter (w) for each module
Power Supply	Mains AC230V, 750W
Connectors	N-Type Female

2.2 Mechanical Specs

Dimensions (LWH)	19" x 4U x 450mm
Weight	15Kg

If installed into a 19" rack/chassis the amplifier must be supported by its rear/side extrusions which will accept M5 captive nuts. The front panel mounts are not sufficient alone to bear the weight of the amplifier.

2.3 Environmental Specs

Operating temperature Range	0 to 40C ambient
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The amplifier should be operated in a clean environment.

Operation in sand/grit dust environment may severely reduce the life of the internal cooling fans.

The front (intake) and rear (exhaust) of the amplifier should not be obstructed.

On no account must the amplifier be exposed to water ingress.

2.4 Options (not supplied on standard equipment)

Remote Control	Enable/Disable (TTL High = OFF) for each PA, via rear panel D-Type
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DC Output Monitors	DC voltage output approximately proportional to RF output power. Nominally +5V @ full power, via rear panel D-type.
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19" Rack mountable (standard)	For installation into 19" rack/chassis
Bench mountable	Free standing with adjustable feet. Rack mount ears removed

3.0 Design Features

3.1 General

The instrument contains two power amplifiers of class AB solid state GaAs FET design, housed in a 19" chassis with forced air cooling. Operation is from a 230V AC supply. Self protection features including over temperature and reverse power protection ensure that the equipment is suitable for use in 100% duty applications, and will deliver the full rated power to a load of any VSWR. Manual and remote (option) control is provided so that the amplifiers may be operated independently and simultaneously.

3.2 Main Features

3.2.1 General

Class AB linear design	<i>For applications requiring good linearity</i>
Unconditional stability	<i>Will not oscillate under any input/output load conditions</i>
Main power keyswitch	<i>With indicator. Initialises unit & activates cooling system</i>
Reverse power protection	<i>Integral isolators absorb all reflected power</i>

3.2.2 For Each Module

Over temperature protection	<i>Automatic over temp shut-down with auto reset & indicator</i>
Power supply status monitor	<i>Indicates status of internal AC/DC convertors</i>
RF indicator	<i>Indicates RF output > nominal 5W</i>
Digital Power Meter	<i>LED display provides indication of forward power in watts</i>
Amplifier enable PB switches	<i>Illuminated. Activates RF power module. (must be ON if TTL used)</i>

4.0 Maintenance

No maintenance is required in normal operation and there are no user-serviceable parts within the amplifier. Each amplifier is factory tested and supplied with a set of test results. If degradation in performance to below the specified levels occurs, or a failure is suspected, then the complete unit should be returned to the manufacturer together with details of the fault.

5.0 Warranty

Microwave Amplifiers Ltd warrants for 2 years from date of shipment that the goods supplied will be in full compliance with the agreed specifications and will be free from defects in material and workmanship. Any and all other warranties (except of title) express or implied, relating to fitness for particular purpose, merchantable quality or otherwise are expressly disclaimed. Seller will not be responsible for special or consequential loss or damages. Liability shall be limited to the repair or replacement of defective products subject to the return of the product intact, and un-tampered with by the buyer.

6.0 Mechanical Outline

See Drg No AM81-06-011

