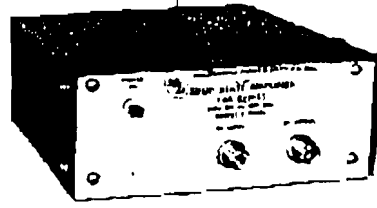
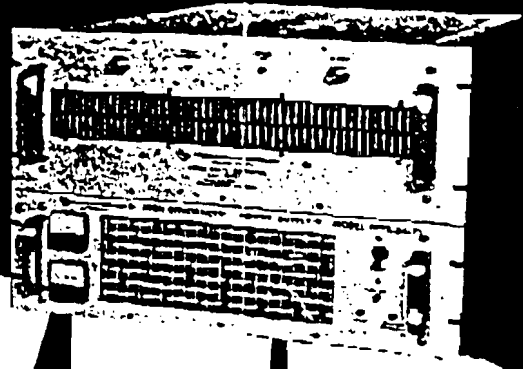




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SOLID STATE
POWER



Series LAB
Solid State Laboratory Power Instruments

Class A Linear Amplifiers
Up to 200 Watts Power Output
Ultra-Broadband: 1 MHz-8.4 GHz

DESIGN/PERFORMANCE FEATURES

- BUILT-IN POWER SUPPLY & COOLING
- SELECTED OCTAVE & DECADE BANDS
- 115 OR 230 VAC INPUT
- INTERNAL/EXTERNAL LEVELING
- EXTERNAL MODULATION
- 15 dB GAIN CONTROL
- LOW DISTORTION
- LOW NOISE FIGURE
- THERMAL OVERLOAD PROTECTION
- OPEN/SHORT CIRCUIT-PROOF

TYPICAL APPLICATIONS

- TWT REPLACEMENT
- GENERAL LAB SETUPS
- EQUIPMENT TESTING
- ANTENNA RANGES
- ECM/EW SYSTEMS
- TV TRANSMITTER DRIVER
- LASER MODULATION
- SATELLITE GROUND STATIONS
- INCOMING INSPECTION
- RF/EMI TESTING

APPLICATION NOTES

Series LAB Power Instruments are particularly recommended for those applications requiring high gain linear amplification of one or more radio frequency signals in with selected bands between 1 MHz and 8.4 GHz, with a high level of solid state reliability.

Their combination of low noise figure and high power output capability yield a large dynamic range, resulting in the capability of low distortion amplification of both single carrier and multi-carrier signals with any form of modulation. Ideal applications include frequency agile multi-carrier ECM/EW jammers, AM visual and FM aural combined television transmitters or drivers, fast rise time pulse amplifiers, and broadband sweep generator boosters. They are excellent replacements for existing vacuum tube systems, and offer stable gain without the necessity of retuning for frequency changes or to compensate for tube aging. In comparison with TWT's, these amplifier instruments provide a higher level of linear power output in comparison to the saturation power output. Power output back-off from saturation to the 1 dB gain compression point is typically only 2 dB.



MICROWAVE POWER DEVICES, INC.

A *MP*COM COMPANY

SOLID STATE HIGH POWER AMPLIFIERS

AMPLIFIER SUB-SYSTEMS / LOW NOISE AMPLIFIERS / IF AMPLIFIERS / MULTI-COUPLED / AM MODULATORS

MODEL SELECTION

Series LAB Power Instruments are available in three basic Series Models (LAB1, LAB2, LAB3) each designed to satisfy a different application requirement. In each, the basic amplifier employed is MPD's field-proven Series LWA Class A Linear Power Amplifier.

Series	Gain Control	Internal Leveling	External Leveling	External Modulation
LAB1	No	No	No	No
LAB2	Yes	No	No	No
LAB3	Yes	Yes	Yes	Yes

LAB1

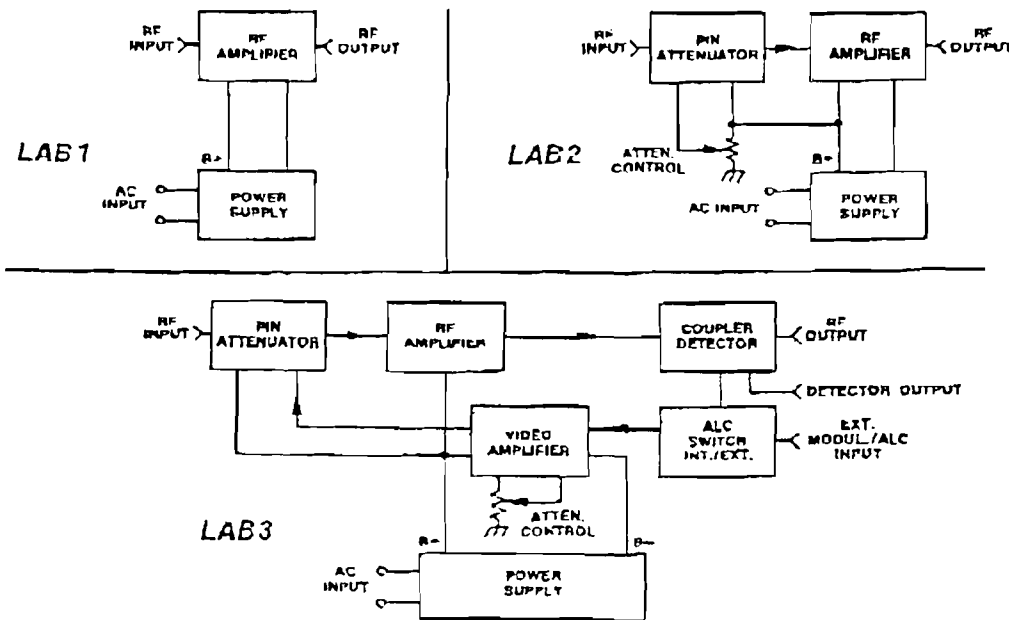
This is the basic model, which includes a Solid State Class A Linear Power Amplifier and an internal power supply. High power models include an integral forced-air cooling system. The highest power models are provided with an external MPD Series HEPS high efficiency switching regulator type Power Supply in a separate enclosure with an interconnecting cable.

LAB2

Identical to LAB1 models with a single exception: a front panel gain control adjustment is included which allows the output power to be reduced continuously by at least 15 dB.

LAB3

Identical to LAB2 units, plus additional features. Internal and external gain leveling functions and an external modulation function are provided. A built-in directional detector and leveling loop provides excellent power output flatness. The internal gain leveling permits the LAB3 to be used with any sweeper or signal generator delivering an input signal varying as much as 6 dB. External gain leveling is provided by automatic level control (ALC) via a front panel switch. This allows remotely-located components to be used in the leveling loop to minimize any cable flatness errors. The detected RF output, available via a front panel connector, provides a feedback signal to level a sweeper or signal generator equipped with the appropriate circuitry. External modulation of the amplifier is provided via a front panel jack. Amplitude, pulse, and square wave modulation are typical modulation modes for the amplifier and are useful for VSWR indicators and antenna pattern measurement equipment.



ADDITIONAL SPECIFICATIONS (applicable to all models except as noted):

AC Input	115 or 230 VAC
Scourous Output	-60 dB
Input Overdrive	
(Above the input signal level required for 1dB compr.)	+10 (except: 3 dB for models 4080-05, 4080-1)
Square Wave Modulation (LAB3 models only)	1000Hz
AM Modulation (LAB3 models only)	DC to 50 KHz
Pulse Modulation (LAB3 models only)	10 μsec. rise/fall time
Gain/Power Adjust (LAB2 models only)	15 dB
Gain/Power Adjust (LAB3 models only)	10 dB
Input Leveling Range (LAB3 models only)	±3 dB
Temperature Range	0° to +50° C, ambient
Connectors	Type N

MODEL NO.	Freq. Range
	MHz
LAB(*)-0110-1 LAB(*)-0110-4 LAB(*)-0110-8	1-1000
LAB(*)-021-10 LAB(*)-021-15	2-100
LAB(*)-055-2	1-500
LAB(*)-055-4 LAB(*)-055-10 LAB(*)-055-20	10-500
LAB(*)-552-4 LAB(*)-552-10 LAB(*)-552-20	50-520
LAB(*)-105-20 LAB(*)-105-30 LAB(*)-105-50 LAB(*)-105-75	100-500
LAB(*)-110-2 LAB(*)-110-4 LAB(*)-110-6 LAB(*)-110-10	100-1000
LAB(*)-204-10 LAB(*)-204-20 LAB(*)-204-50 LAB(*)-204-75	225-400
LAB(*)-510-1 LAB(*)-510-2 LAB(*)-510-4 LAB(*)-510-10 LAB(*)-510-15 LAB(*)-510-30 LAB(*)-510-50 LAB(*)-510-80 LAB(*)-510-120	500-1000
LAB(*)-714-1 LAB(*)-714-3 LAB(*)-714-6 LAB(*)-714-10	700-1400
LAB(*)-912-10 LAB(*)-912-20	900-1220
LAB(*)-1020-1 LAB(*)-1020-2 LAB(*)-1020-5 LAB(*)-1020-9	1000-2000
LAB(*)-1724-06 LAB(*)-1724-1 LAB(*)-1724-2	1700-2400
LAB(*)-2040-05 LAB(*)-2040-1	2000-4000
LAB(*)-2223-3 LAB(*)-2223-10	2200-2300
LAB(*)-4080-05 LAB(*)-4080-1	4000-8000
LAB(*)-3742-1 LAB(*)-3742-2	3700-4200
LAB(*)-4450-1 LAB(*)-4450-2	4400-5000
LAB(*)-5964-1 LAB(*)-5964-2	5900-6400
LAB(*)-7984-1 LAB(*)-7984-2	7900-8400