



Model 450S1G3, M1
450 Watts CW
0.8–3GHz

The Model 450S1G3 is a self-contained, air-cooled, broadband, completely solid-state amplifier designed for applications where instantaneous bandwidth, high gain and linearity are required. Quadrature coupled circuitry is utilized in all high power stages in the interest of lowering distortion and improving stability. The Model 450S1G3, when used with a sweep generator, will provide a minimum of 450 watts of RF power.

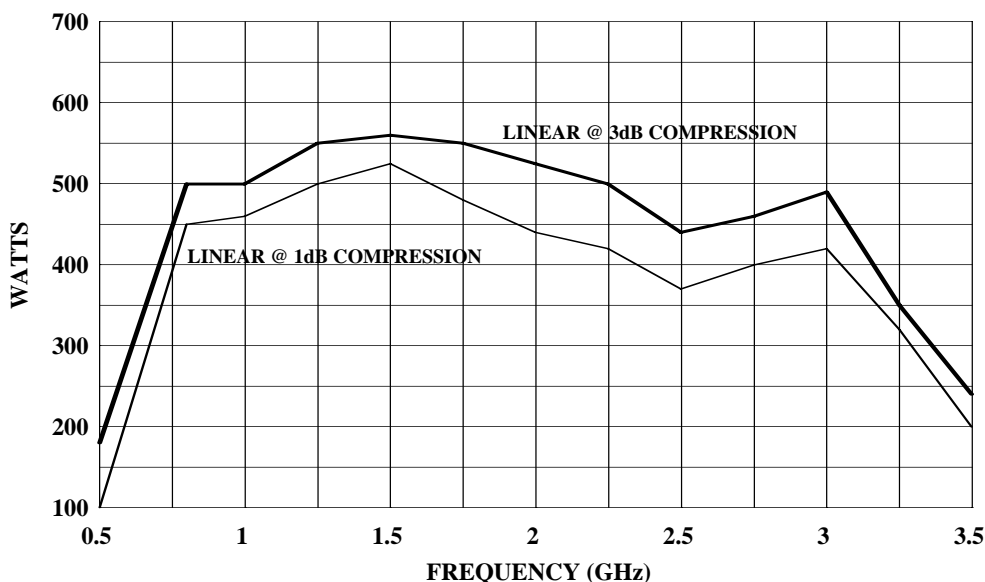
The Model 450S1G3 is equipped with a Digital Control Panel (DCP) which provides both local and remote control of the amplifier. The DCP uses a digital display, menu assigned softkeys, a single rotary knob, and four dedicated switches (POWER, STANDBY, OPERATE and FAULT/RESET) to offer extensive control and status reporting capability. The display provides operational presentation of Forward Power and Reflected Power plus control status and reports of internal amplifier status. Special features include a gain control, internal/external automatic level control (ALC) with front panel control of the ALC threshold, pulse input capability and RF output level protection. Also included is an internal RF detector which provides an output for use in self-testing or operational modes.

All amplifier control functions and status indications are available remotely in GPIB/IEEE-488 format and RS-232 hardware and fiber optic. The buss interface connector is located on the back panel and positive control of local or remote operation is assured by a keylock on the front panel of the amplifier.

The low level of spurious signals and linearity of the Model 450S1G3 make it ideal for use as a driver amplifier in testing wireless and communication components and subsystems. It can be used as a test instrument covering multiple frequency bands and is suitable for a variety of communication technologies such as CDMA, W-CDMA, TDMA, GSM etc. It is also suitable for EMC Test applications where undistorted modulation envelopes are desired.

The controller and the 240S1G3A Sub Amplifier can each be used as 240 watt amplifiers when 450S1G3 power output is not required. By simply adding one 240S1G3A amplifier and the appropriate combiner, along with minor tuning, the 450S1G3 is upgraded to a 600S1G3 amplifier with expandability to the 800S1G3 amplifier system.

450S1G3 TYPICAL POWER OUTPUT



SPECIFICATIONS, MODEL 450S1G3

RATED OUTPUT POWER	0.8–3GHz, 450 watts minimum
INPUT FOR RATED OUTPUT	1.0 milliwatt maximum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	470 watts
Minimum	370 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	430 watts
Minimum	340 watts
FLATNESS	±3.5 dB maximum ±1.0 dB with internal leveling
FREQUENCY RESPONSE	0.8-3.0GHz instantaneously; 3.1GHz for 450S1G3M1
GAIN (at maximum setting)	56.5 dB minimum
GAIN ADJUSTMENT	15 dB minimum
INPUT IMPEDANCE	50 ohms, VSWR 2.0:1 maximum
OUTPUT IMPEDANCE	50 ohms nominal
MISMATCH TOLERANCE *	100% of rated power without foldback. Will operate without damage or oscillation with any magnitude and phase of source and load impedance.
MODULATION CAPABILITY	Will faithfully reproduce AM, FM, or pulse modulation appearing on the input signal
HARMONIC DISTORTION	Minus 20 dBc maximum at 380 watts
THIRD ORDER INTERCEPT POINT	67 dBm typical
RF POWER DISPLAY	Digital, forward and reflected
PRIMARY POWER	200-240VAC 50/60 Hz, single phase 5000 watts
CONNECTORS	
RF input	Type N female on front panel
RF output	Type 7-16 on rear
External leveling inputs	Type BNC female on front panel
Pulse modulation input	Type BNC female on front panel
Detected RF output	Type BNC female on front panel
Safety Interlock	15 pin female subminiature D on rear panel
Remote computer interface	24 pin female IEEE-488.2 (GPIB) connector on rear panel
Remote computer interface (fiber optic)	ST Conn Tx and Rx RS-232
IEEE-488 (GPIB) INTERFACE & RS-232	Allows control and monitoring of all front panel controls except keylock position control
COOLING	Forced air (self contained fans) enters front and bottom
WEIGHT (approximate)	386 kg (850 lbs)
SIZE (WxHxD) (2 cabinets)	
Cabinet 1	56.1 x 109 x 67.1 cm (22.1 x 43.0 x 26.4 in)
Cabinet 2	56.1 x 152.4 x 67.1 cm (22.1 x 60.0 x 26.4 in)

NOTE: Allow approximately 61 cm, 24 in depth behind cabinet for interconnect cable

*See Application Note #27

MODEL CONFIGURATIONS

MODEL NUMBER	RF INPUT	RF OUTPUT
450S1G3	Type N female on front panel	Type 7-16 on rear panel
450S1G3M1	Same as 450S1G3 except frequency range is 0.8–3.1GHz	