Model 540S1G4
540 Watts CW
0.8GHz–4.2GHz

The Model 540S1G4 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 540S1G4, when used with a sweep generator, will provide a minimum of 540 watts of RF power.

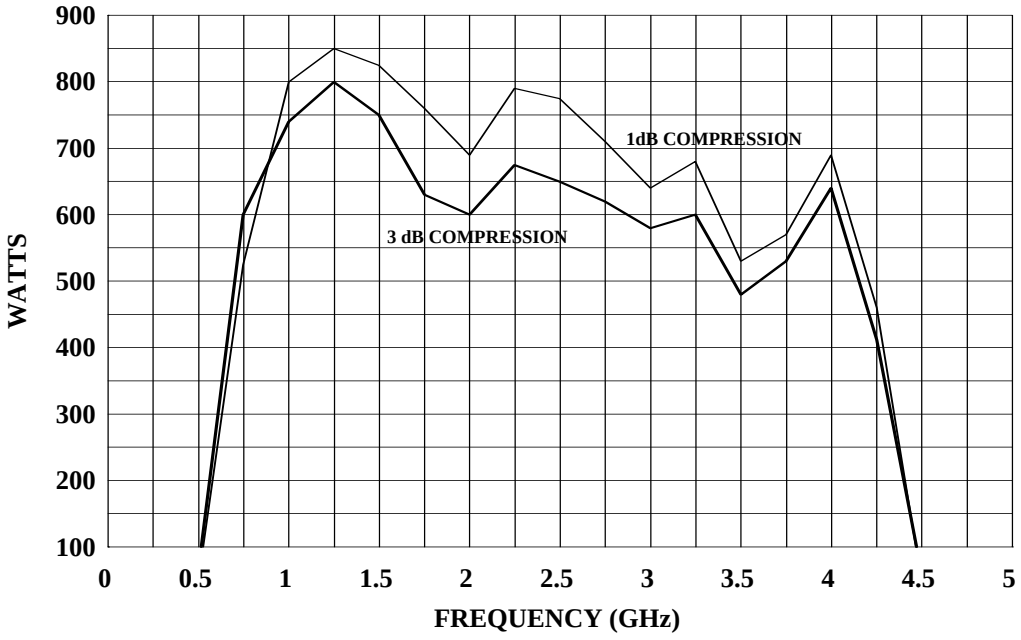
The Model 540S1G4, is equipped with a Digital Control Panel (DCP) which provides both local and remote control of the amplifier. The DCP uses a digital display, menu assigned soft keys, a single rotary knob, and four dedicated switches (POWER, STANDBY, OPERATE and FAULT/RESET) to offer extensive control 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 that 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 hardwire 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 540S1G4, 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 Sub Amplifiers can each be used as individual 200 watt amplifiers when the 540S1G4 power output is not required. By simply adding one 200S1G4 amplifier and the appropriate combiner, along with minor tuning, the 540S1G4 is upgraded to the 700S1G4 amplifier system.

540S1G4 TYPICAL POWER OUTPUT



SPECIFICATIONS, MODEL 540S1G4

RATED OUTPUT POWER	0.8 – 4.2 GHz: 540 watts minimum
INPUT FOR RATED OUTPUT	1.0 milliwatt maximum
POWER OUTPUT @ 3 dB COMPRESSION	
Nominal	585 watts
Minimum	485 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	535 watts
Minimum	430 watts
FLATNESS	±3.5 dB maximum ±1.0 dB with internal leveling
FREQUENCY RESPONSE	0.8 - 4.2 GHz instantaneously
GAIN (at maximum setting)	57.4 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 475 watts
THIRD ORDER INTERCEPT POINT	67 dBm typical
RF POWER DISPLAY	Digital, forward and reflected
PRIMARY POWER	200-240 VAC 50/60 Hz, single phase 6850 watts
CONNECTORS	
RF input	Type N female on front panel
RF output	Type 7/8 EIA on rear panel
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)	600 kg (1323 lbs)
SIZE (W x H x D) (3 cabinets)	
Cabinet 1 (2 cabinets)	56.1 x 109 x 67.1 cm (22.1 x 43.0 x 26.4 in)
Cabinet 2 (1 cabinet)	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