



**Model 90S4G8,  
M1 through M3  
90 Watts CW  
4.0 GHz–8.0 GHz**

The Model 90S4G8 is a portable, self-contained, air-cooled, broadband, completely solid-state amplifier designed for applications where instantaneous bandwidth, high gain and linearity are required. The Model 90S4G8, when used with a sweep generator, will provide a minimum of 90 watts of RF power instantaneously from 4 to 8 GHz.

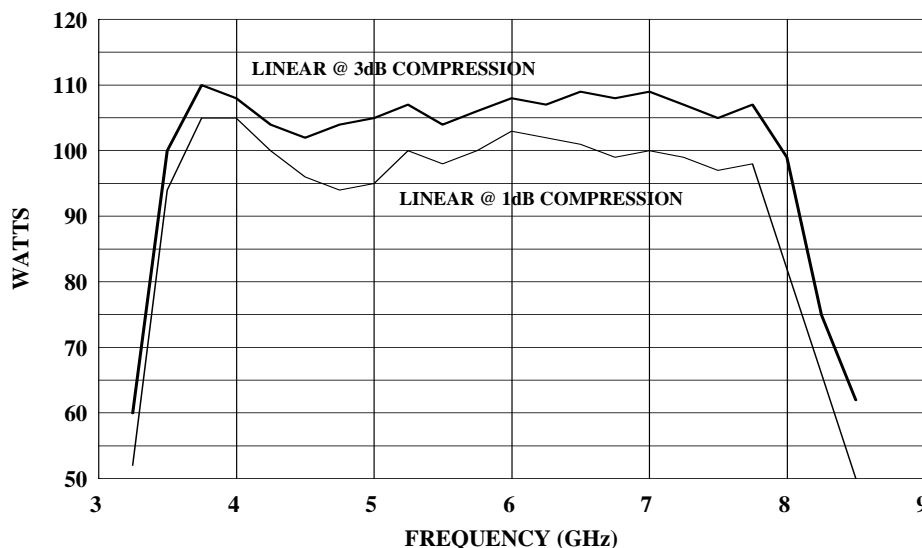
The Model 90S4G8 is equipped with a Digital Control Panel (DCP) which provides both local and remote control of the amplifier. The DCP uses a graphic Liquid Crystal Display, menu assigned softkeys, a single rotary knob, and a dedicated power on/off switch to offer extensive control and status reporting 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, RS-232 hardware and fiber optic, USB, and Ethernet. 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 Model 90S4G8 is designed to have low spurious signals, linearity and is extremely load tolerant which enables it to be used in many RF applications such as: RF susceptibility testing, antenna/component testing, and communication technology testing. 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, UWB, WiMAX etc.

The 90S4G8 is part of AR's Expandable Power concept, which gives the amplifier much more versatility. The 90S4G8 consists of three 35S4G8A sub-amplifiers housed in a single equipment rack with a controller. The 90S4G8 can function as one amplifier or be separated and operate as three separate 35S4G8A amplifiers which can be used independently. The 90S4G8 can be upgraded in the future to a 120S4G8 by simply adding one more 35S4G8 sub-amplifier, upgrading the controller and performing minor tuning. Model 90S4G8M2 is not upgradable.

**90S4G8 TYPICAL POWER OUTPUT**



## SPECIFICATIONS, MODEL 90S4G8

RATED POWER OUTPUT .....	90 watts minimum
<b>POWER OUTPUT @ 3dB COMPRESSION</b>	
Nominal .....	100 watts
Minimum .....	90 watts
<b>POWER OUTPUT @ 1dB COMPRESSION</b>	
Nominal .....	90 watts
Minimum .....	75 watts
FLATNESS.....	±1.5 dB typical ±2.5 dB maximum
FREQUENCY RESPONSE .....	4.0–8.0 GHz instantaneously
INPUT FOR RATE OUTPUT .....	1.0 milliwatt maximum, 0 dBm
GAIN (at maximum setting) .....	49.6 dB minimum
GAIN ADJUSTMENT (Continuous Range) .....	10 dB minimum
INPUT IMPEDANCE.....	50 ohms, VSWR 2.5:1 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. *See Application Note #27.
MODULATION CAPABILITY.....	Will faithfully reproduce AM, FM, or pulse modulation appearing on the input signal
HARMONIC DISTORTION.....	Minus 20 dBc maximum at 90 watts
THIRD ORDER INTERCEPT POINT .....	57 dBm typical
RF POWER DISPLAY .....	Digital, forward, and reflected
PRIMARY POWER (selected automatically).....	90-132, 180-264 VAC 50/60 Hz, single phase <1800 watts maximum
<b>CONNECTORS</b>	
RF Input .....	See Model Configurations
RF Output .....	Type N female 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
<b>REMOTE INTERFACES</b>	
IEEE-488.....	24 pin female
RS-232 .....	9 pin Subminiature D (female)
RS-232 (Fiber-optic) .....	Type ST
USB 2.0 .....	Type B
Ethernet.....	RJ-45
SAFETY INTERLOCK .....	15 Pin Subminiature D
COOLING.....	Forced air (self contained fans)
WEIGHT (approximate) .....	148kg (325 lbs)
SIZE (W x H x D).....	56.1 x 152.4 x 67.1cm (22.1 x 60.0 x 26.4 in)

### MODEL CONFIGURATIONS

Model	RF Input	Comments
90S4G8	N female on front	
90S4G8M1	N female on rear	
90S4G8M2	N female on rear	Special configuration with 7U (12.25 inch) rack space available for auxiliary equipment. Unit is not upgradable.
90S4G8M3	N female on rear	Supplied without an outer enclosure. For use in AR rack systems only.