Model 60S4G8, M2, M3
60 Watts CW
4.0 GHz–8.0 GHz

The Model 60S4G8 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 60S4G8, when used with a sweep generator, will provide a minimum of 60 watts of RF power instantaneously from 4 to 8 GHz.

The Model 60S4G8 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 hardwire 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 60S4G8 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 60S4G8 is part of AR's Expandable Power concept, which gives the amplifier much more versatility. The 60S4G8 consists of two 35S4G8A sub-amplifiers housed in a single equipment rack with a controller. The 60S4G8 can function as one amplifier or be separated and operate as two separate 35S4G8A amplifiers which can be easily removed and used independently. The 60S4G8 can be upgraded in the future to a 90S4G8 and a 120S4G8 by simply adding more 35S4G8 sub-amplifiers, upgrading the controller and performing minor tuning.

60S4G8 TYPICAL POWER OUTPUT
SPECIFICATIONS, MODEL 60S4G8

RATED POWER OUTPUT .................................................. 60 watts minimum

POWER OUTPUT @ 3dB COMPRESSION
  Nominal .................................................. 70 watts
  Minimum .................................................. 60 watts

POWER OUTPUT @ 1dB COMPRESSION
  Nominal .................................................. 60 watts
  Minimum .................................................. 55 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) ........................................... 47.8 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 60 watts

THIRD ORDER INTERCEPT POINT ................................ 56 dBm typical

RF POWER DISPLAY .................................................. Digital, forward, and reflected

PRIMARY POWER (selected automatically) .................... 90-132, 180-264 VAC
  50/60 Hz, single phase
  <1300 watts maximum

CONNECTORS
  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

REMOTE INTERFACES
  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 ............................................................... 113.4 kg (250 lbs)

SIZE (W x H x D) ..................................................... 56.1 x 90.2 x 67.1 cm (22.1 x 35.5 x 26.4 in)

<table>
<thead>
<tr>
<th>Model</th>
<th>RF Input</th>
<th>RF Output</th>
<th>Forward/Reverse Sample Ports (–40dBc)</th>
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</thead>
<tbody>
<tr>
<td>60S4G8</td>
<td>N female on front panel</td>
<td>N female on rear panel</td>
<td>N/A</td>
</tr>
<tr>
<td>60S4G8M1</td>
<td>Obsolete. Same as 60S4G8M2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60S4G8M2</td>
<td>N female on rear panel</td>
<td>N female on rear panel</td>
<td>N/A</td>
</tr>
<tr>
<td>60S4G8M3</td>
<td>N female on front panel</td>
<td>N female on rear panel</td>
<td>N female on front panel</td>
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</tbody>
</table>

The 60S4G8M3 has an internal 40 dB directional coupler for forward and reflected sample ports. Output power is reduced due to additional directional coupler loss

Rated power 55 watts
Power output @ 3dB compression 55 watts
Power output @ 1dB compression 50 watts