The Model 10S4G11A is a solid state, self-contained, air-cooled, broadband amplifier designed for applications where instantaneous bandwidth and high gain are required. Housed in a stylish contemporary cabinet, the unit is designed for benchtop use, but can be removed from the cabinet for immediate equipment rack mounting. The 10S4G11A, when used with a sweep generator, will provide a minimum of 10 watts of RF power. Included is a front panel gain control which permits the operator to conveniently set the desired output level. The 10S4G11A is protected from RF input overdrive by an RF input leveling circuit which controls the RF input level to the RF amplifier first stage when the RF input level is increased above 0 dBm. The RF amplifier stages are protected from over temperature by removing the DC voltage to them if an over temperature condition occurs due to cooling blockage or fan failure. There is a digital display on the front panel to indicate the operate status and fault conditions when an overtemperature or power supply fault has occurred. The unit can be returned to operate when the condition has been cleared. The 10S4G11A includes digital control for both local and remote control of the amplifier. The control system is composed of a 16-bit RISC microcontroller board which handles primary functions of the amplifier and interprets commands sent to it from an 8-bit remote interface board. This 8-bit microprocessor controlled board provides both IEEE-488 (GPIB) and asynchronous, full duplex RS-232 control of all amplifier functions.

The Model 10S4G11A has the ability to be upgraded at a later date to the Model 20S4G11A 20-watt amplifier. Upgrading to the 20S4G11A allows for future upgrades by utilizing our Expandable Power Technology.

**10S4G11 TYPICAL POWER OUTPUT**

![Graph showing typical power output of 10S4G11A amplifier at 1dB and 3dB compression levels across a frequency range of 2 to 12 GHz.]
SPECIFICATIONS, MODEL 10S4G11A

RATED POWER OUTPUT .............................................. 10 watts minimum

POWER OUTPUT @ 3dB COMPRESSION
   Nominal ..................................................... 13 watts
   Minimum ................................................... 10 watts

POWER OUTPUT @ 1dB COMPRESSION
   Nominal ..................................................... 11 watts
   Minimum ................................................... 9 watts

FLATTENESS .......................................................... ±2.0 dB typical
   ±3.0 dB maximum

FREQUENCY RESPONSE ............................................ 4.0–10.6 GHz instantaneously

INPUT FOR RATE OUTPUT ........................................ 1.0 milliwatt maximum, 0 dBm

GAIN (at maximum setting) ...................................... 40 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.

MODULATION CAPABILITY ...................................... Will faithfully reproduce AM, FM, or pulse modulation appearing on the input
signal

HARMONIC DISTORTION .......................................... Minus 20 dBc maximum at 10 watts

THIRD ORDER INTERCEPT POINT .............................. 50 dBm typical

PRIMARY POWER (selected automatically) ................. 90-132, 180-264 VAC
   50/60 Hz, single phase
   <300 watts maximum

CONNECTORS
   RF ........................................................................ See Model Configurations
   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)

*See Application Note #27.

MODEL CONFIGURATIONS

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>RF INPUT</th>
<th>RF OUTPUT</th>
<th>WEIGHT</th>
<th>SIZE (W x H x D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10S4G11A</td>
<td>Type N female on front panel</td>
<td>Type N female on front panel</td>
<td>31.3 kg (69 lbs)</td>
<td>50.3 x 24.9 x 54.6 cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19.8 x 9.8 x 21.5 in</td>
</tr>
<tr>
<td>10S4G11AM1</td>
<td>Type N female on rear panel</td>
<td>Type N female on rear panel</td>
<td>31.3 kg (69 lbs)</td>
<td>50.3 x 24.9 x 54.6 cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19.8 x 9.8 x 21.5 in</td>
</tr>
<tr>
<td>10S4G11AM2</td>
<td>Same as 10S4G11A with enclosure removed for rack mounting</td>
<td></td>
<td>18.2 kg (40 lbs)</td>
<td>48.3 x 22.2 x 54.6 cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19 x 8.75 x 21.5 in</td>
</tr>
<tr>
<td>10S4G11AM3</td>
<td>Same as 10S4G11AM1 with enclosure removed for rack mounting</td>
<td></td>
<td>18.2 kg (40 lbs)</td>
<td>48.3 x 22.2 x 54.6 cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19 x 8.75 x 21.5 in</td>
</tr>
</tbody>
</table>