



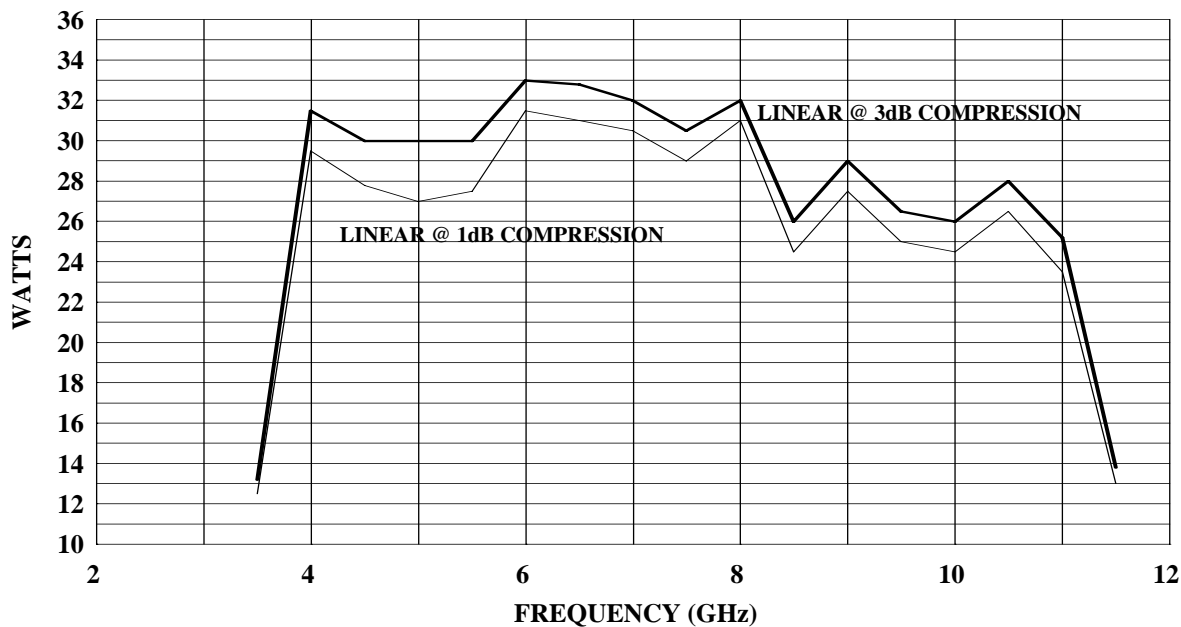
**Model 20S4G11A,
M1 through M6
20 Watts CW
4.0–10.6 GHz**

The Model 20S4G11A 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 20S4G11A, when used with a sweep generator, will provide a minimum of 20 watts of RF power. Included is a front panel gain control which permits the operator to conveniently set the desired output level. The 20S4G11A 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 20S4G11A 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 20S4G11A is housed in a cabinet and designed to provide standalone performance for RF testing. It is also configured to be used as a sub-amplifier in a 40 watt, 60 watt, or 80 watt higher power amplifiers. It can be added to in an incremental fashion to become a part of these higher power units, yet still be used as a standalone 20-watt amplifier.

The RF output connector must be configured to the rear panel to be used as a sub-amplifier.

20S4G11A TYPICAL POWER OUTPUT



SPECIFICATIONS, MODEL 20S4G11A

RATED POWER OUTPUT	20 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	25 watts
Minimum	20 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	22 watts
Minimum	18 watts
FLATNESS.....	±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)	43 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 20 watts
THIRD ORDER INTERCEPT POINT	52 dBm typical
PRIMARY POWER (selected automatically).....	90-132, 180-264 VAC 50/60 Hz, single phase <550 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
Sub-Amplifier Interface	RJ-45
SAFETY INTERLOCK.....	15 Pin Subminiature D
COOLING.....	Forced air (self contained fans)

*See Application Note #27.

MODEL CONFIGURATIONS

MODEL NUMBER	RF INPUT	RF OUTPUT	WEIGHT	SIZE (W x H x D)
20S4G11A	Type N female on front panel	Type N female on front panel	42.6 kg (94 lbs)	50.3 x 24.9 x 54.6 cm 19.8 x 9.8 x 21.5 in
20S4G11AM1	Type N female on rear panel	Type N female on rear panel	42.6 kg (94 lbs)	50.3 x 24.9 x 54.6 cm 19.8 x 9.8 x 21.5 in
20S4G11AM2	Type N female on front panel	Type N female on rear panel	42.6 kg (94 lbs)	50.3 x 24.9 x 54.6 cm 19.8 x 9.8 x 21.5 in
20S4G11AM3	Same as 20S4G11A with enclosure removed for rack mounting		29.5 kg (65 lbs)	48.3 x 22.2 x 54.6 cm 19 x 8.75 x 21.5 in
20S4G11AM4	Same as 20S4G11AM1 with enclosure removed for rack mounting		29.5 kg (65 lbs)	48.3 x 22.2 x 54.6 cm 19 x 8.75 x 21.5 in
20S4G11AM5	Same as 20S4G11AM2 with enclosure removed for rack mounting		29.5 kg (65 lbs)	48.3 x 22.2 x 54.6 cm 19 x 8.75 x 21.5 in
20S4G11AM6	Same as 20S4G11AM4 with front panel handles, side carry handles, and slides added for expandable power amplifier rack mounting.		29.5 kg (65 lbs)	48.3 x 22.2 x 54.6 cm 19 x 8.75 x 21.5 in