



rf/microwave instrumentation

Model xx/xxS1G11 20-80/5-20 Watts CW 0.8GHz-10.6GHz

The Model Series xx/xxS1G11 are portable, self-contained, air-cooled, dual-band, broadband, completely solid-state amplifiers designed for applications where instantaneous bandwidth, high gain and linearity are required.

The models are equipped with a Digital Control Panel (DCP) which provides both local and remote control of the amplifier. The digital display on the front panel indicates control status and reports of internal amplifier status. All amplifier control functions and status indications are available remotely in GPIB/IEEE-488 format, RS-232 hardwire and fiber optic, USB, and Ethernet.

These models are designed to have low spurious signals, linearity and are extremely load tolerant which enables them to be used in many RF applications such as: RF susceptibility testing, antenna/component testing, and communication technology testing. They can be used as test instruments covering multiple frequency bands and are suitable for a variety of communication technologies such as CDMA, W-CDMA, TDMA, GSM, UWB, WiMAX etc.

These models have the ability to be upgraded at a later date to the highest power levels listed in the model configurations.

Available Model Configurations

20 watts, 0.8-4.2GHz	40 watts, 0.8-4.2GHz	60 watts, 0.8-4.2GHz	80 watts, 0.8-4.2GHz
5 watts, 4.0-10.6GHz	20/5S1G11	40/5S1G11	60/5S1G11
10 watts, 4.0-10.6GHz	20/10S1G11	40/10S1G11	60/10S1G11
20 watts, 4.0-10.6GHz	20/20S1G11	40/20S1G11	60/20S1G11

SPECIFICATIONS COMMON TO ALL MODELS IN THE SERIES

INPUT FOR RATED OUTPUT	1.0 milliwatt maximum, 0 dBm
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
SPURIOUS	Minus 73 dBc typical
CONNECTORS	
RF INPUT.....	TYPE N (front panel)
RF OUTPUT	TYPE N (front panel)
M1 version (2) RF OUTPUT (1 for each band)	TYPE N (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)
SIZE (WxHxD).....	50.3x34.3x61cm (19.8x13.5x24in) Cabinet 48.3x31.1x61cm (19x12.25x24in)

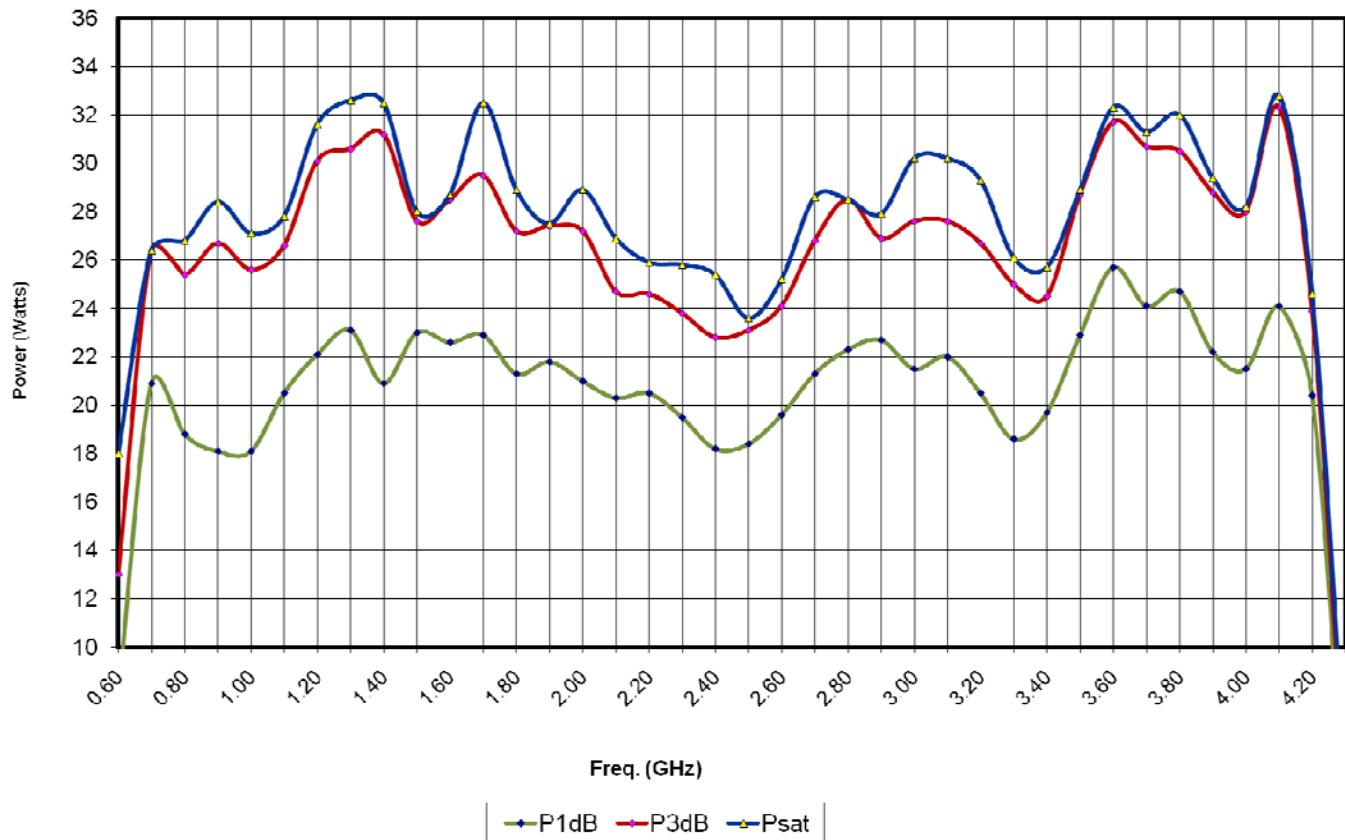
MODEL CONFIGURATIONS

Model	# of RF Outputs		RF Input & Output Connector Location		Cabinet
	1	2	Front	Rear	
Std	x		x		Yes
M1		x	x		Yes
M2	x			x	Yes
M3		x		x	Yes
M4	x		x		No
M5	x			x	No
M6		x	x		No
M7		x		x	No

SPECIFICATIONS, MODEL 20/xxS1G11, 0.8–4.2 GHz BAND

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	± 1.5 dB typical ± 2.0 dB maximum
FREQUENCY RESPONSE	0.8 - 4.2GHz instantaneously
GAIN (at maximum setting)	43 dB minimum
HARMONIC DISTORTION	Minus 20 dBc maximum at 20 watts
THIRD ORDER INTERCEPT POINT	52 dBm typical
NOISE FIGURE	10 dB typical
PRIMARY POWER (selected automatically).....	90-264 VAC 50/60 Hz, single phase 150 watts maximum

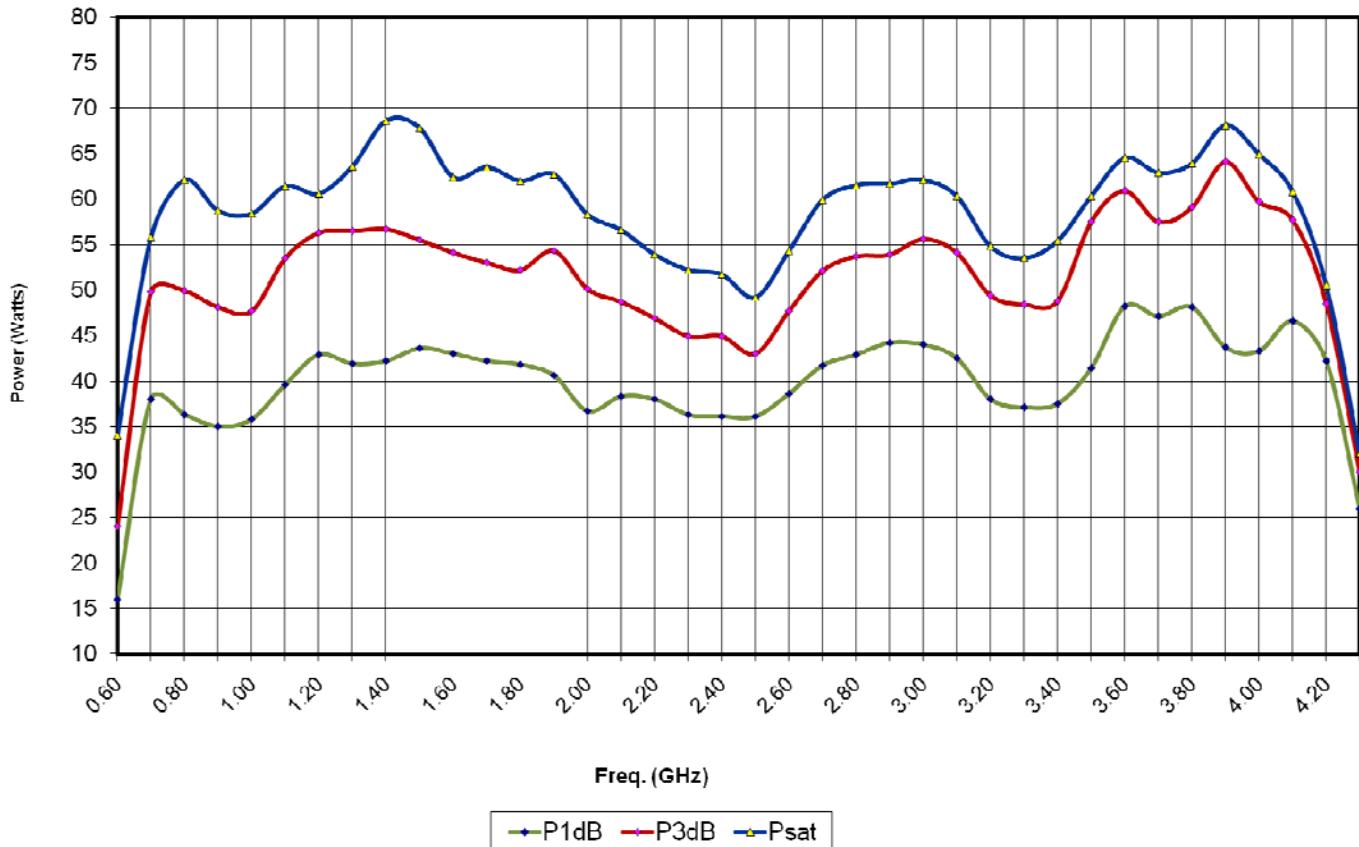
20/xxS1G11 TYPICAL POWER OUTPUT WITH 0.8-4.2GHz BAND SELECTED



SPECIFICATIONS, MODEL 40/xxS1G11, 0.8–4.2 GHz BAND SELECTED

RATED POWER OUTPUT	40 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	50 watts
Minimum	40 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	44 watts
Minimum	35 watts
FLATNESS	± 1.5 dB typical ± 2.0 dB maximum
FREQUENCY RESPONSE	0.8–4.2 GHz instantaneously
GAIN (at maximum setting)	46 dB minimum
THIRD ORDER INTERCEPT	55 dBm typical
NOISE FIGURE	10 dB typical
HARMONIC DISTORTION	Minus 20 dbc, max at 40 watts
PRIMARY POWER	(Selected Automatically) 90-264 VAC 50/60 Hz, single phase 280 watts maximum

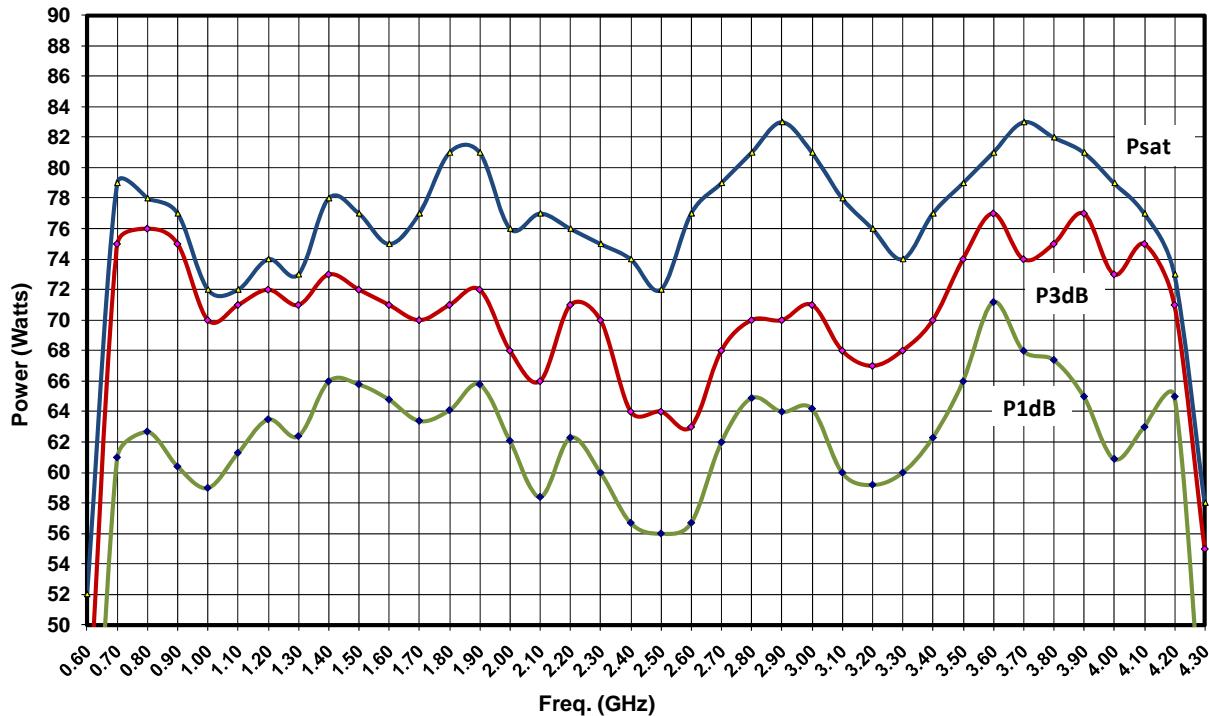
40/xxS1G11 TYPICAL POWER OUTPUT WITH 0.8-4.2GHz BAND SELECTED



SPECIFICATIONS, MODEL 60/xxS1G11, 0.8–4.2 GHz BAND SELECTED

RATED POWER OUTPUT	60 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	70 watts
Minimum	60 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	65 watts
Minimum	50 watts
FLATNESS	± 1.5 dB typical ± 2.0 dB maximum
FREQUENCY RESPONSE	0.8–4.2 GHz instantaneously
GAIN (at maximum setting)	47.8 dB minimum
THIRD ORDER INTERCEPT	57 dBm typical
NOISE FIGURE	10 dB typical
HARMONIC DISTORTION	Minus 20 dBc max at 60 watts
PRIMARY POWER (Selected Automatically)	90-264 VAC 50/60 Hz, single phase 415 watts maximum

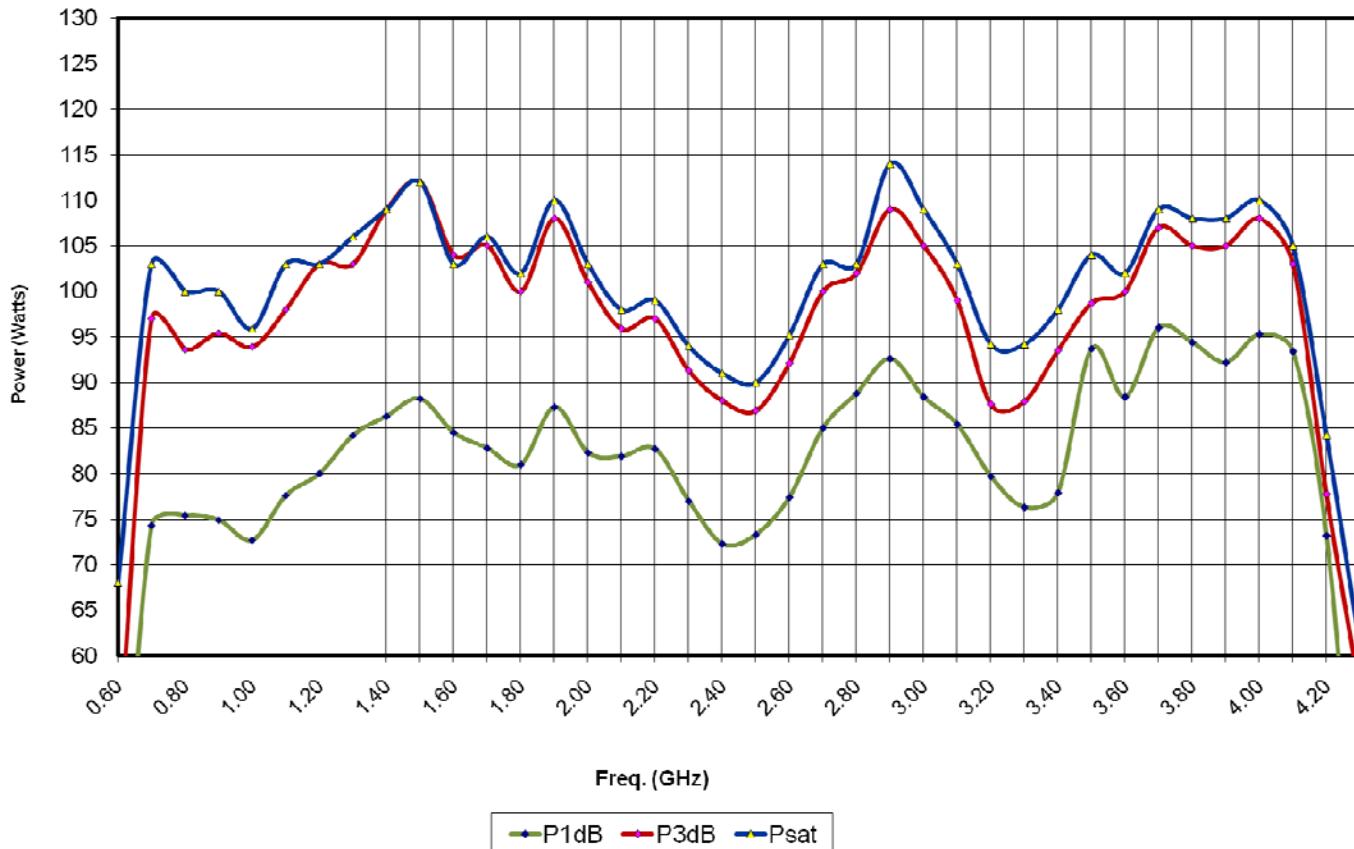
60/xxS1G11 TYPICAL POWER OUTPUT WITH 0.8-4.2GHz BAND SELECTED



SPECIFICATIONS, MODEL 80/xxS1G11, 0.8–4.2 GHz BAND SELECTED

RATED POWER OUTPUT	80 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	95 watts
Minimum	80 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	85 watts
Minimum	70 watts
FLATNESS	± 1.5 dB typical ± 2.0 dB maximum
FREQUENCY RESPONSE	0.8–4.2 GHz instantaneously
GAIN (at maximum setting)	49 dB minimum
THIRD ORDER INTERCEPT	58 dBm typical
NOISE FIGURE	10 dB typical
HARMONIC DISTORTION	Minus 20 dBc max at 80 watts
PRIMARY POWER (Selected Automatically)	90-264 VAC 50/60 Hz, single phase 450 watts maximum

80/xxS1G11 TYPICAL POWER OUTPUT WITH 0.8-4.2GHz BAND SELECTED



SPECIFICATIONS, MODEL XX/5S1G11, 4.0–10.6 GHz BAND

RATED POWER OUTPUT 5 watts minimum

POWER OUTPUT @ 3dB COMPRESSION

Nominal 7 watts
Minimum 5.5 watts

POWER OUTPUT @ 1dB COMPRESSION

Nominal 6 watts
Minimum 4.5 watts

FLATNESS..... ± 2.0 dB typical
..... ± 3.0 dB maximum

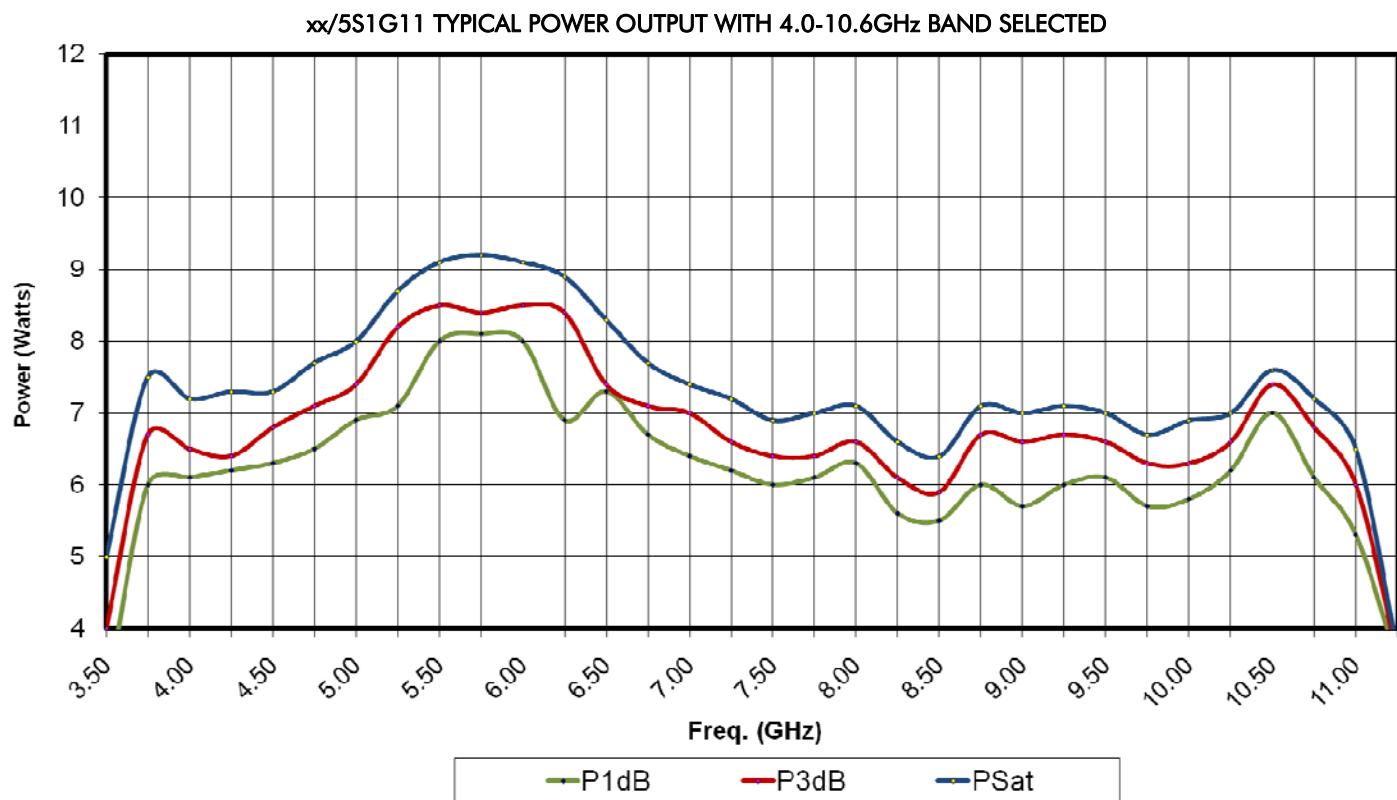
FREQUENCY RESPONSE 4.0–10.6 GHz instantaneously

GAIN (at maximum setting) 37 dB minimum

HARMONIC DISTORTION Minus 20 dBc maximum at 5 watts

THIRD ORDER INTERCEPT POINT 47 dBm typical

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



SPECIFICATIONS, MODEL XX/10S1G11, 4.0–10.6 GHz BAND

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

FLATNESS..... ± 2.0 dB typical
..... ± 3.0 dB maximum

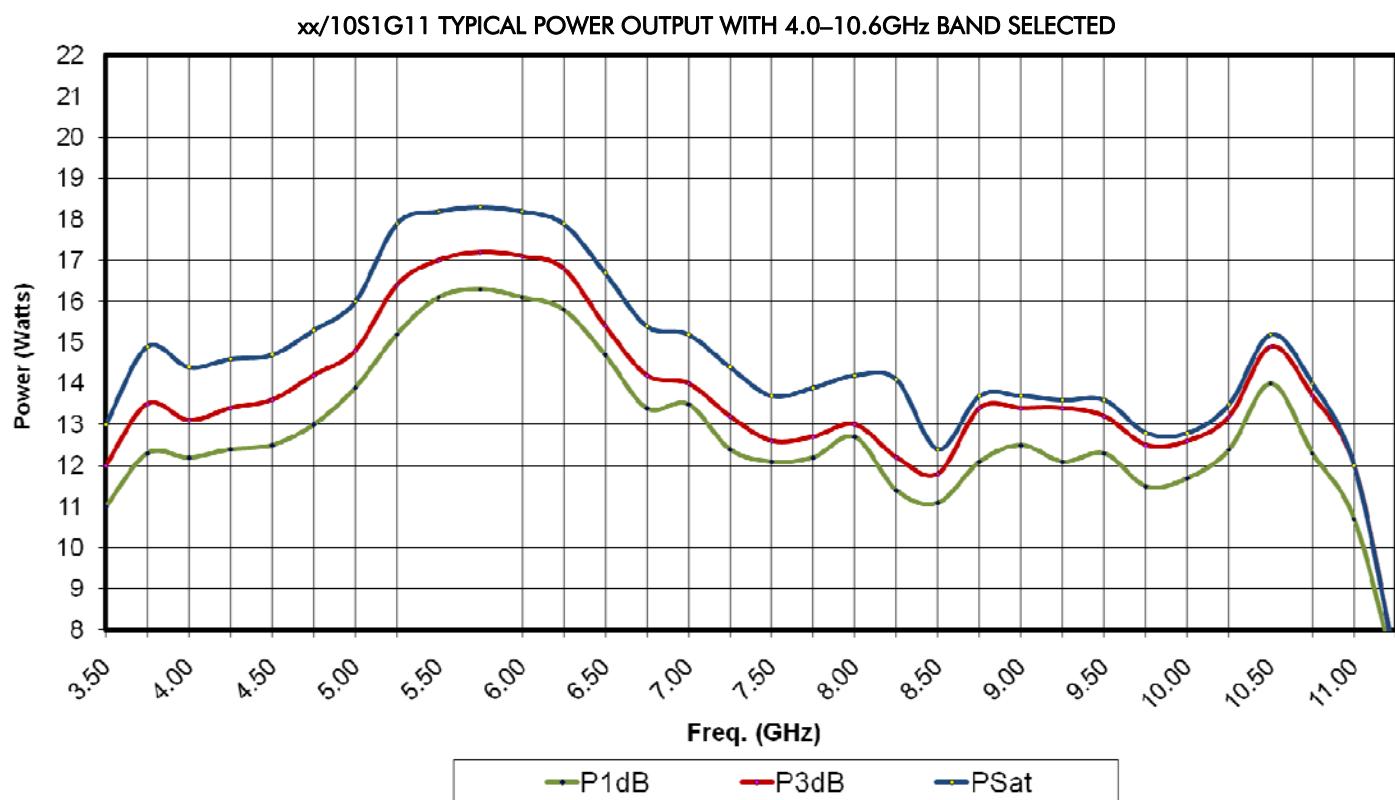
FREQUENCY RESPONSE 4.0–10.6 GHz instantaneously

GAIN (at maximum setting) 40 dB minimum

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

THIRD ORDER INTERCEPT POINT 50 dBm typical

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



SPECIFICATIONS, MODEL xx/20S1G11, 4.0–10.6 GHz BAND

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
GAIN (at maximum setting)	43 dB minimum
HARMONIC DISTORTION	Minus 20 dBc maximum at 20 watts
THIRD ORDER INTERCEPT POINT	52 dBm typical
PRIMARY POWER (selected automatically).....	90-264 VAC 50/60 Hz, single phase 550 watts maximum

xx/20S1G11 TYPICAL POWER OUTPUT WITH 4.0-10.6GHz BAND SELECTED

