



Model xx/xxS1G18
15-80/10-40 Watts CW
0.7GHz-18.0GHz

The Model Series xx/xxS1G18 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, exhibit very good 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.

The export classification for these amplifiers is 3A001. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

Available Model Configurations

	20 watts, 0.7-4.2GHz	40 watts, 0.7-4.2GHz	60 watts, 0.7-4.2GHz	80 watts, 0.7-4.2GHz
10 watts, 4.0-18.0GHz	20/10S1G18	40/10S1G18	60/10S1G18	80/10S1G18
20 watts, 4.0-18.0GHz	20/20S1G18	40/20S1G18	60/20S1G18	80/20S1G18
40 watts, 4.0-18.0GHz	20/40S1G18	40/40S1G18	60/40S1G18	80/40S1G18

	15 watts, 0.7-6.0GHz	25 watts, 0.7-6.0GHz	50 watts, 0.7-6.0GHz
10 watts, 6.0-18.0GHz	15/10S1G18	25/10S1G18	50/10S1G18
20 watts, 6.0-18.0GHz	15/20S1G18	25/20S1G18	50/20S1G18
40 watts, 6.0-18.0GHz	15/40S1G18	25/40S1G18	50/40S1G18

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 (2) RF OUTPUTS (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 (W x H x D) (Cabinet)	50.3 x 34.3 x 61 cm (19.8 x 13.5 x 24 in) 48.3 x 31.1 x 61 cm (19.0 x 12.25 x 24 in)

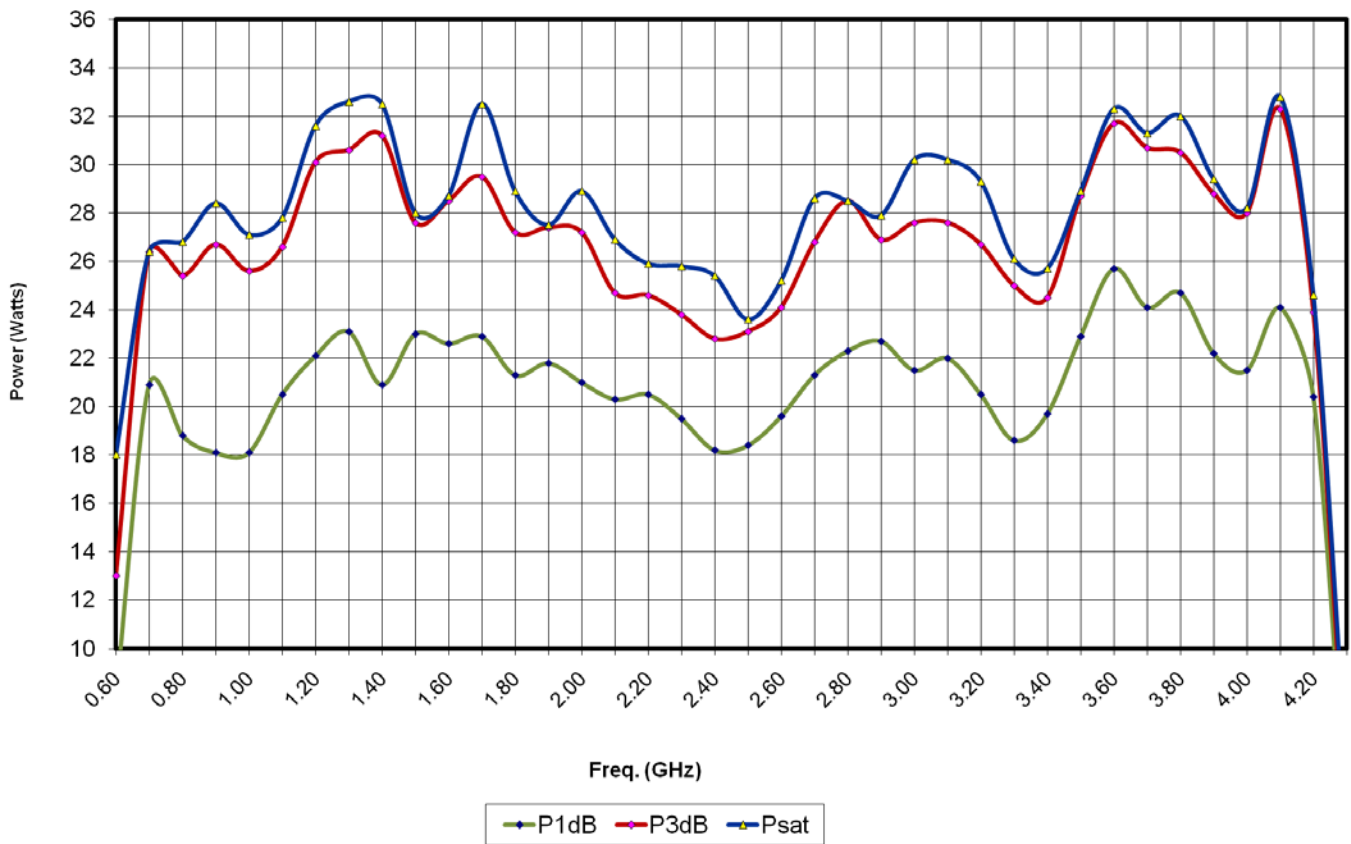
MODEL CONFIGURATIONS

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/xxS1G18, 0.7–4.2 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	0.7–4.2GHz 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

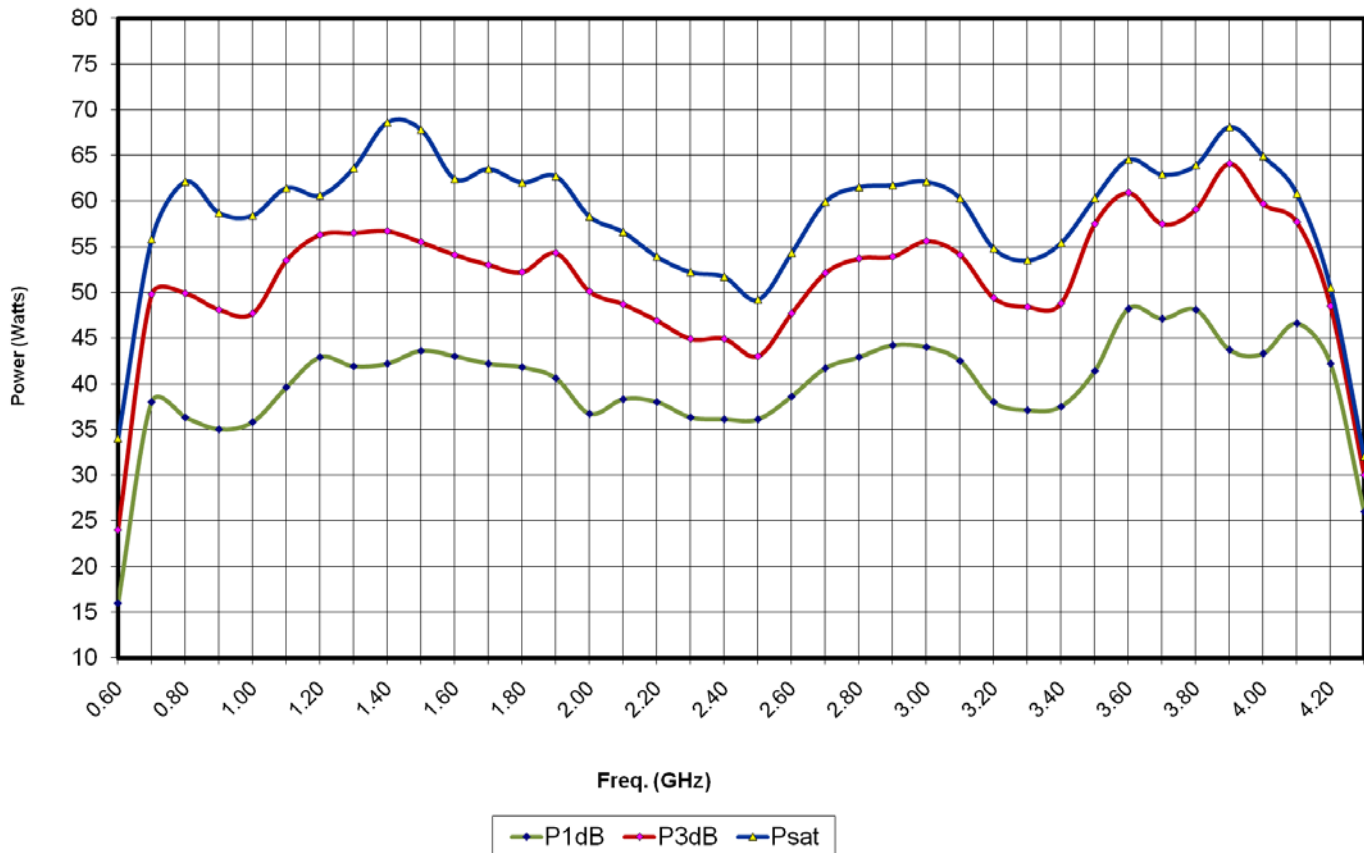
20/xxS1G18 TYPICAL POWER OUTPUT WITH 0.7-4.2GHz BAND SELECTED



SPECIFICATIONS, MODEL 40/XXS1G18, 0.7–4.2 GHz BAND SELECTED

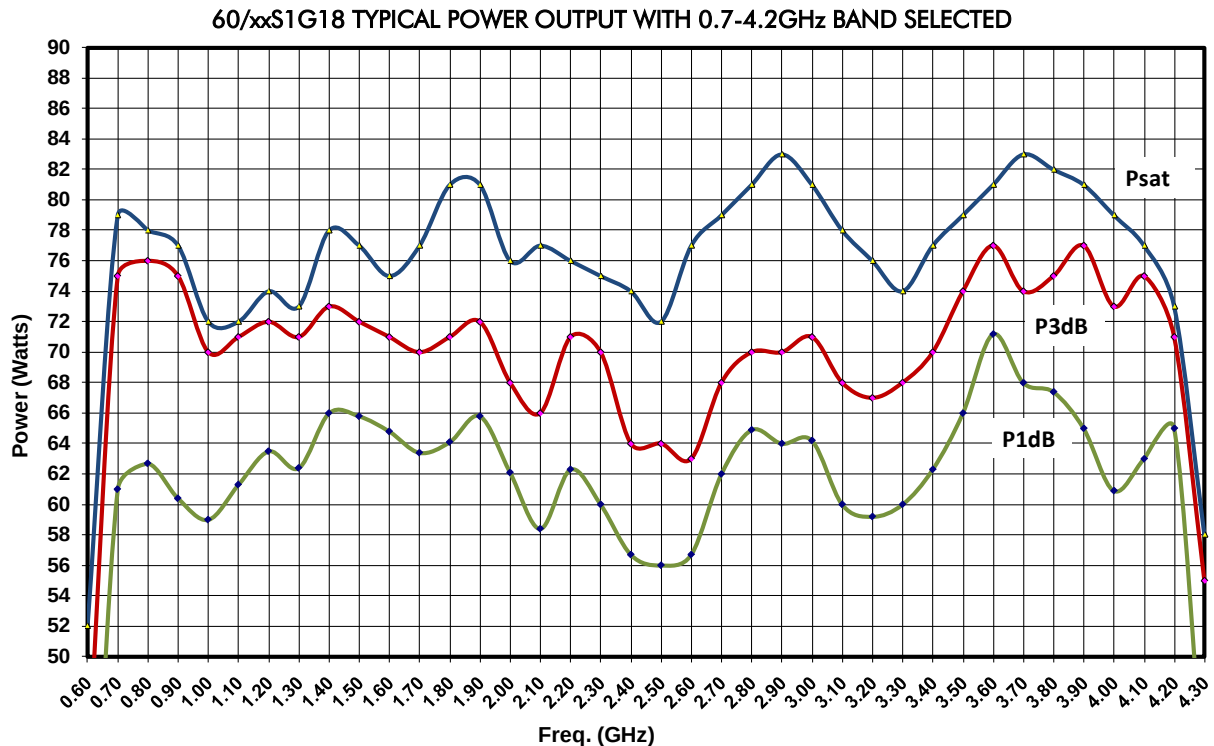
RATED POWER OUTPUT	40 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	50 watts
Minimum	40 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	44 watts
Minimum	35 watts
FLATNESS.....	±1.5 dB typical ±2.0 dB maximum
FREQUENCY RESPONSE	0.7–4.2 GHz instantaneously
GAIN (at maximum setting)	46 dB minimum
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/xxS1G18 TYPICAL POWER OUTPUT WITH 0.7-4.2GHz BAND SELECTED



SPECIFICATIONS, MODEL 60/XXS1G18, 0.7–4.2 GHz BAND SELECTED

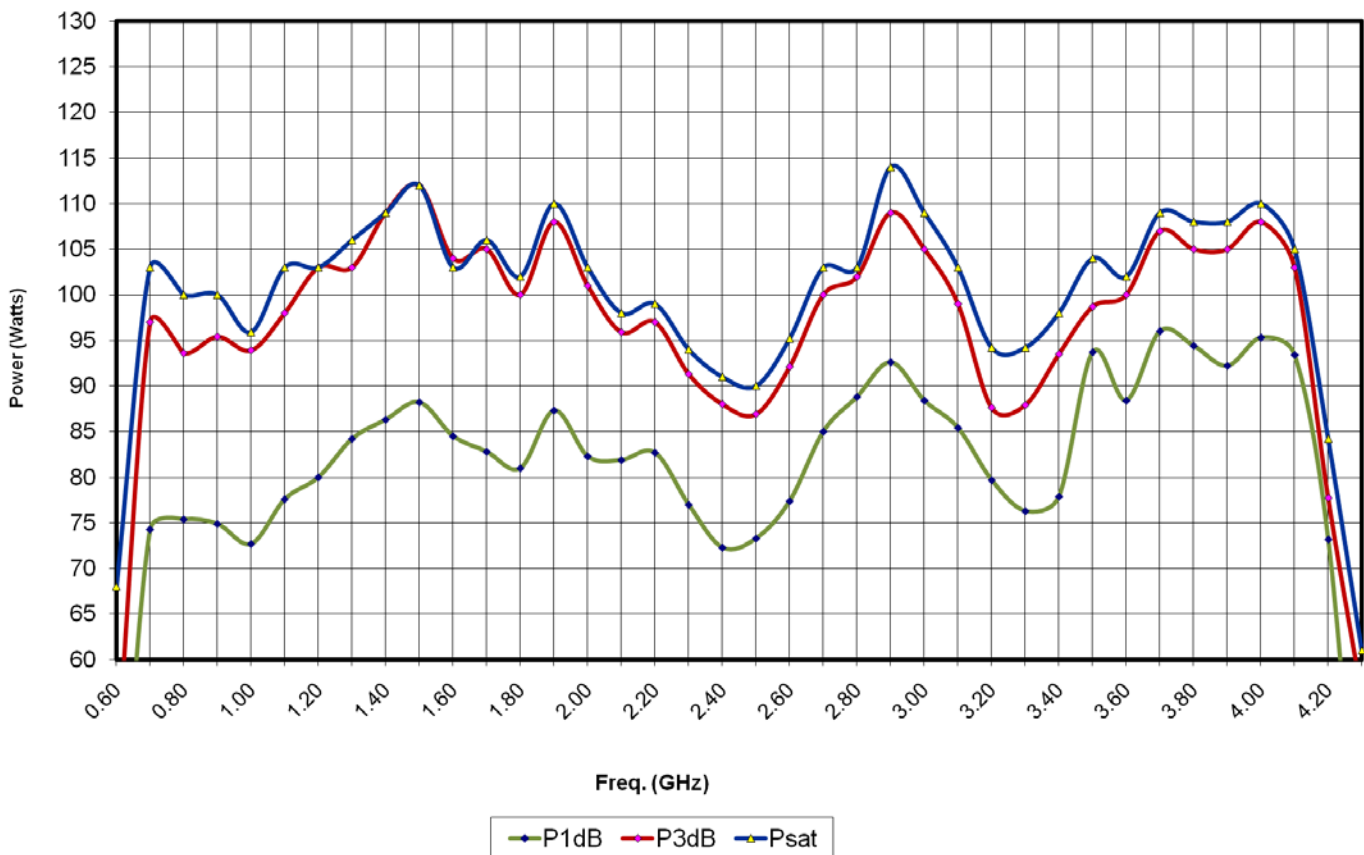
RATED POWER OUTPUT	60 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	70 watts
Minimum	60 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	65 watts
Minimum	50 watts
FLATNESS.....	±1.5 dB typical ±2.0 dB maximum
FREQUENCY RESPONSE	0.7–4.2 GHz instantaneously
GAIN (at maximum setting)	47.8 dB minimum
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



SPECIFICATIONS, MODEL 80/XXS1G18, 0.7–4.2 GHz BAND SELECTED

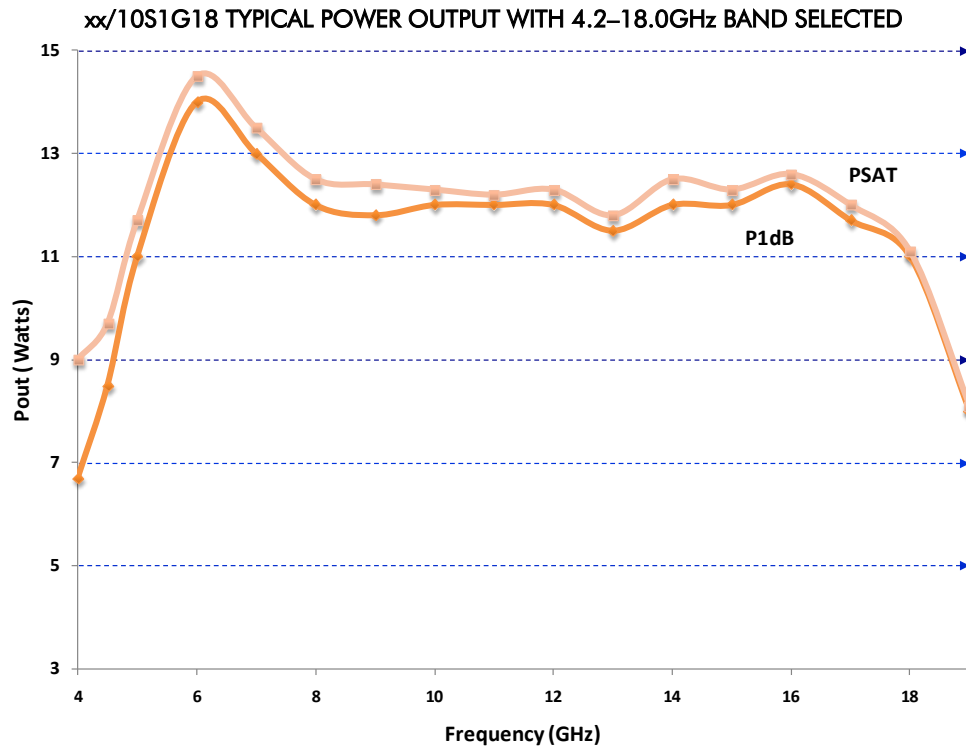
RATED POWER OUTPUT	80 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	95 watts
Minimum	80 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	85 watts
Minimum	70 watts
FLATNESS.....	±1.5 dB typical ±2.0 dB maximum
FREQUENCY RESPONSE	0.7–4.2 GHz instantaneously
GAIN (at maximum setting)	49 dB minimum
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/xxS1G18 TYPICAL POWER OUTPUT WITH 0.7-4.2GHz BAND SELECTED



SPECIFICATIONS, MODEL xx/10S1G18, 4.2–18.0 GHz BAND

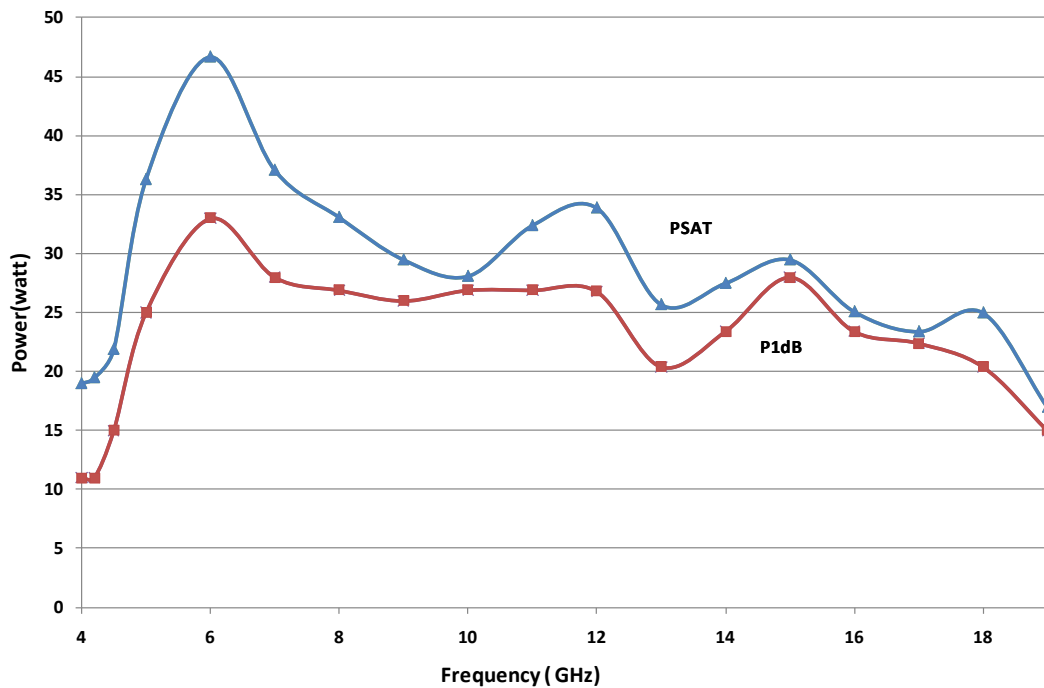
RATED POWER OUTPUT	10 watts minimum (5-18 GHz) 7 watts minimum (4.2-5 GHz)
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	13 watts
Minimum	10 watts (5-18 GHz); 7 watts (4.2-5 GHz)
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	12 watts
Minimum	9 watts (5-18 GHz); 6 watts (4.2-5 GHz)
FLATNESS.....	±3.0 dB typical ±4.0 dB maximum
FREQUENCY RESPONSE	4.2–18.0 GHz instantaneously
GAIN (at maximum setting)	40 dB minimum
HARMONIC DISTORTION	Minus 20 dBc max at 10 watts (5-18 GHz) and 7 watts (4.2-5 GHz)
THIRD ORDER INTERCEPT POINT	47 dBm typical
PRIMARY POWER (selected automatically).....	90-264 VAC 50/60 Hz, single phase 550 watts maximum



SPECIFICATIONS, MODEL xx/20S1G18, 4.2–18.0 GHz BAND

RATED POWER OUTPUT	20 watts minimum (5-18 GHz) 12 watts minimum (4.2-5 GHz)
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	25 watts
Minimum	20 watts (5-18 GHz), 12 watts (4.2-5 GHz)
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	22 watts
Minimum	18 watts (5-18 GHz), 10 watts (4.2-5 GHz)
FLATNESS	
@ 1 dB COMPRESSION	±3.0 dB typical, ±4.0 dB maximum
RFIN=-20 dBm	±4.0 dB typical, ±5.0 dB maximum
FREQUENCY RESPONSE	4.2–18.0 GHz instantaneously
GAIN (at maximum setting)	44 dB minimum
HARMONIC DISTORTION	Minus 20 dBc max (5-18 GHz), minus 12 dBc max at 20 watts (4.2-5 GHz)
THIRD ORDER INTERCEPT POINT	49 dBm typical
PRIMARY POWER (selected automatically)	90-264 VAC 50/60 Hz, single phase 600 watts maximum

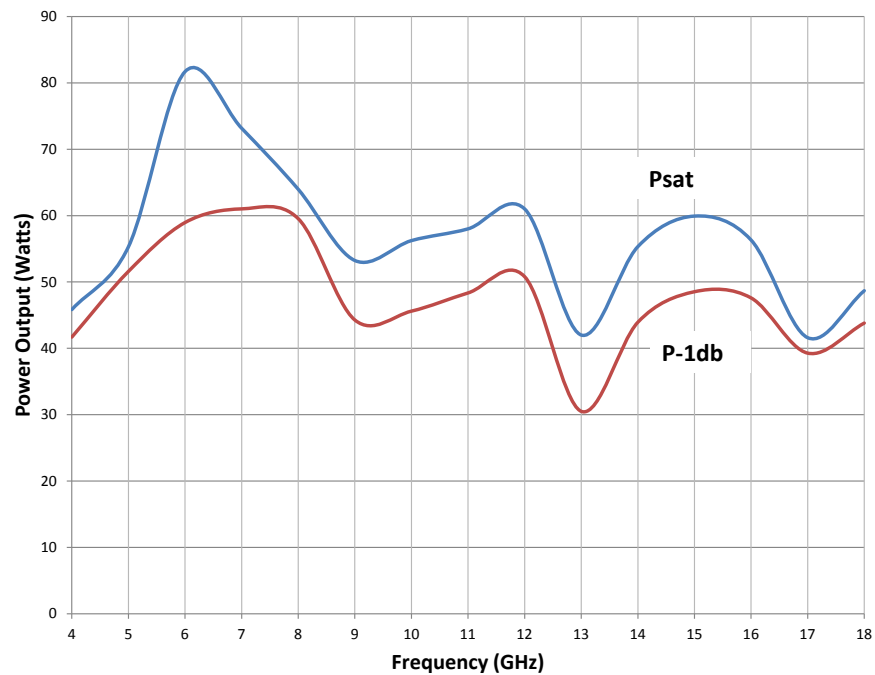
XX/20S1G18 TYPICAL POWER OUTPUT WITH 4.2–18.0GHz BAND SELECTED



SPECIFICATIONS, MODEL xx/40S1G18, 4.2–18.0 GHz BAND

RATED POWER OUTPUT	35 watts minimum, 45 watts typical
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	46 watts
Minimum	37 watts (5-18 GHz), 20 watts (4.2 GHz)
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	40 watts
Minimum	30 watts (5-18 GHz), 18 watts (4.2 GHz)
FLATNESS	
@ 1 dB COMPRESSION	± 2.0 dB typical, ± 4.0 dB maximum
RFIN=-20 dBm.....	± 4.0 dB typical, ± 5.0 dB maximum
FREQUENCY RESPONSE	4.2–18.0 GHz instantaneously
GAIN (at maximum setting)	48 dB minimum
HARMONIC DISTORTION	Minus 20 dBc max at 35 watts (5-18 GHz), at 20 watts (4.2 GHz)
THIRD ORDER INTERCEPT POINT	52 dBm typical
PRIMARY POWER (selected automatically).....	90-264 VAC
	50/60 Hz, single phase
	<1000 watts maximum

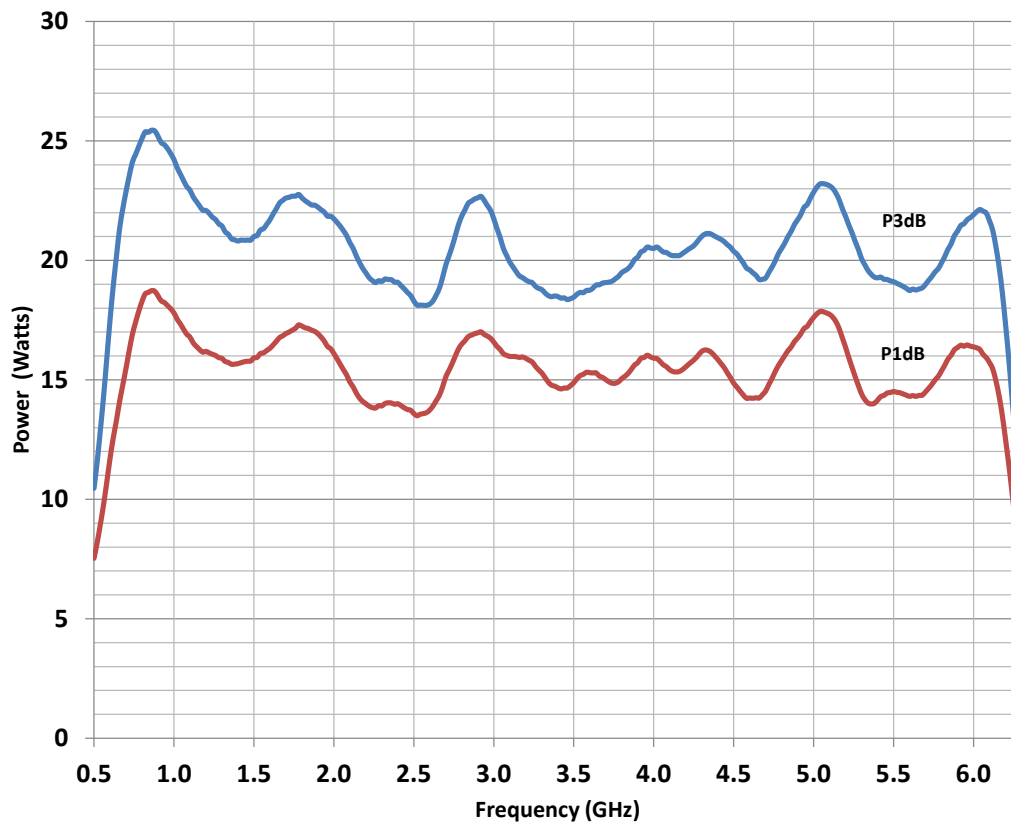
XX/40S1G18 TYPICAL POWER OUTPUT WITH 4.2–18.0GHz BAND SELECTED



SPECIFICATIONS, MODEL 15/xxS1G18, 0.7–6.0 GHz BAND

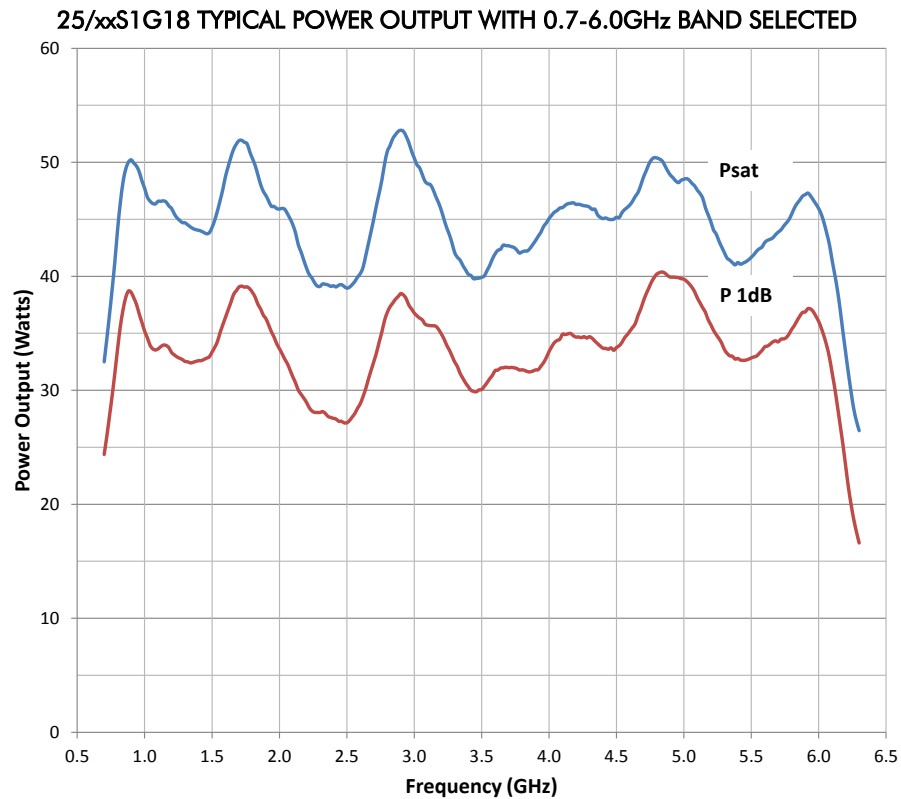
RATED POWER OUTPUT	15 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	20 watts
Minimum	15 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	15 watts
Minimum	12 watts
FLATNESS.....	±1.5 dB typical ±2.0 dB maximum
FREQUENCY RESPONSE	0.7–6.0GHz instantaneously
GAIN (at maximum setting)	43 dB minimum
HARMONIC DISTORTION	Minus 20 dBc maximum at 15 watts (1.0-6.0 GHz) Minus 15 dBc typical at 15 watts (0.7-1.0 GHz)
THIRD ORDER INTERCEPT POINT	48 dBm typical
NOISE FIGURE	10 dB typical
PRIMARY POWER (selected automatically).....	90-264 VAC 50/60 Hz, single phase 210 watts maximum

15/xxS1G18 TYPICAL POWER OUTPUT WITH 0.7-6.0GHz BAND SELECTED



SPECIFICATIONS, MODEL 25/XXS1G18, 0.7–6.0 GHz BAND SELECTED

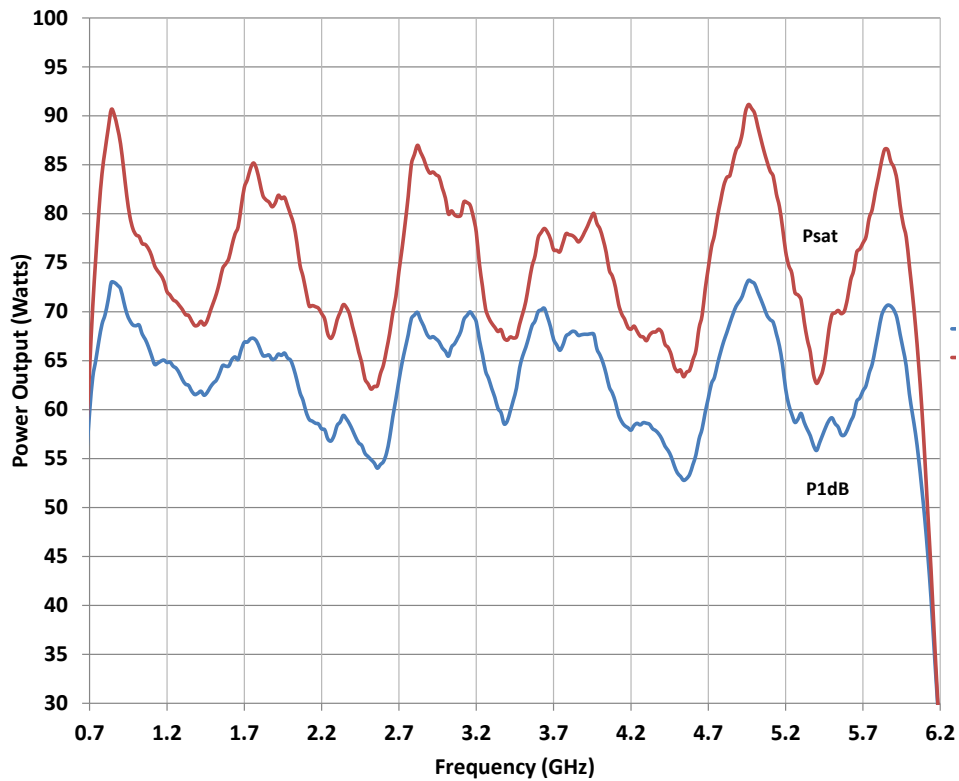
RATED POWER OUTPUT	25 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	30 watts
Minimum	25 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	25 watts
Minimum	20 watts
FLATNESS.....	±1.5 dB typical ±2.0 dB maximum
FREQUENCY RESPONSE	0.7–6.0 GHz instantaneously
GAIN (at maximum setting)	46 dB minimum
THIRD ORDER INTERCEPT	51 dBm typical
NOISE FIGURE	10 dB typical
HARMONIC DISTORTION	Minus 20 dbc, max at 25 watts (1.0-6.0 GHz) Minus 15 dBc typical at 25 watts (0.7-1.0 GHz)
PRIMARY POWER	(Selected Automatically) 90-264 VAC 50/60 Hz, single phase 300 watts maximum



SPECIFICATIONS, MODEL 50/XXS1G18, 0.7–6.0 GHz BAND SELECTED

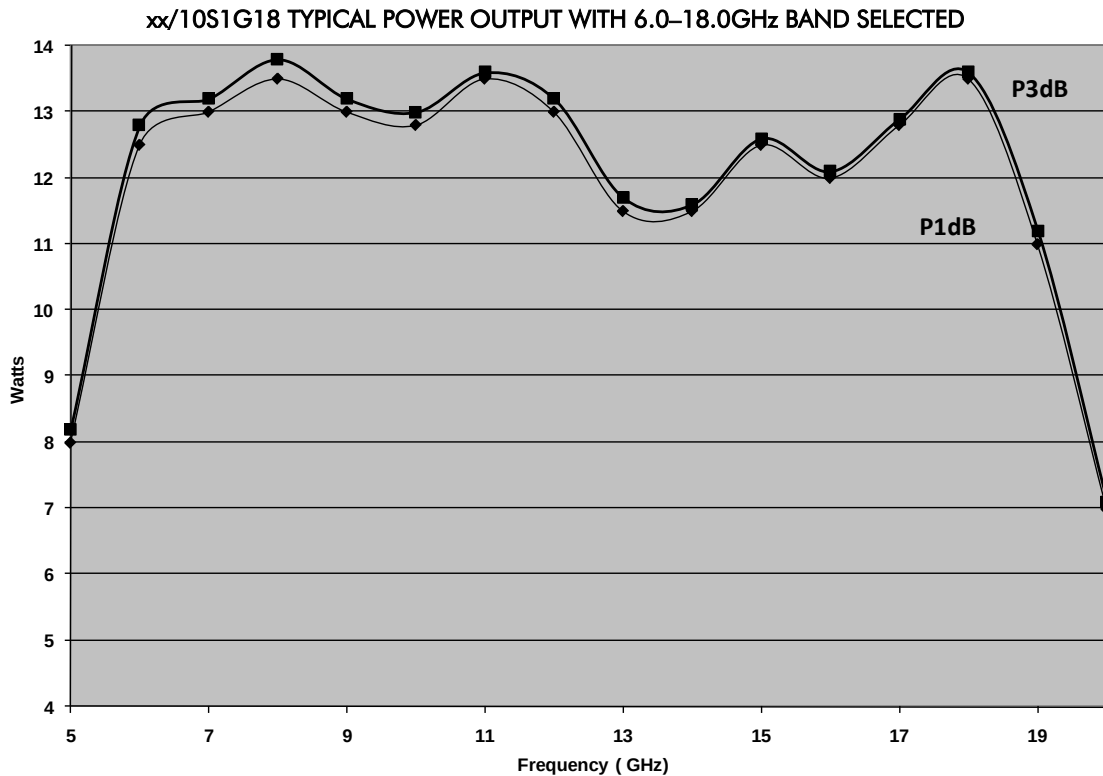
RATED POWER OUTPUT	50 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	65 watts
Minimum	50 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	50 watts
Minimum	40 watts
FLATNESS.....	±1.5 dB typical ±2.0 dB maximum
FREQUENCY RESPONSE	0.7–6.0 GHz instantaneously
GAIN (at maximum setting)	48 dB minimum
THIRD ORDER INTERCEPT	56 dBm typical
NOISE FIGURE	10 dB typical
HARMONIC DISTORTION.....	Minus 20 dBc max at 40 watts (1.0-6.0 GHz) Minus 15 dBc typical at 40 watts (0.7-1.0 GHz)
PRIMARY POWER (Selected Automatically)	90-264 VAC 50/60 Hz, single phase 525 watts maximum

50/xxS1G18 TYPICAL POWER OUTPUT WITH 0.7-6.0GHz BAND SELECTED



SPECIFICATIONS, MODEL xx/10S1G18, 6.0–18.0 GHz BAND

RATED POWER OUTPUT	10 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	13 watts
Minimum	10 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	12 watts
Minimum	9 watts
FLATNESS.....	±2.0 dB typical ±3.0 dB maximum
FREQUENCY RESPONSE	6.0–18.0 GHz instantaneously
GAIN (at maximum setting)	40 dB minimum
HARMONIC DISTORTION	Minus 20 dBc max at 10 watts
THIRD ORDER INTERCEPT POINT	47 dBm typical
PRIMARY POWER (selected automatically).....	90-264 VAC 50/60 Hz, single phase 550 watts maximum



SPECIFICATIONS, MODEL xx/20S1G18, 6.0–18.0 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 dB COMPRESSION ± 2.0 dB typical, ± 3.0 dB maximum

FREQUENCY RESPONSE 6.0–18.0 GHz instantaneously

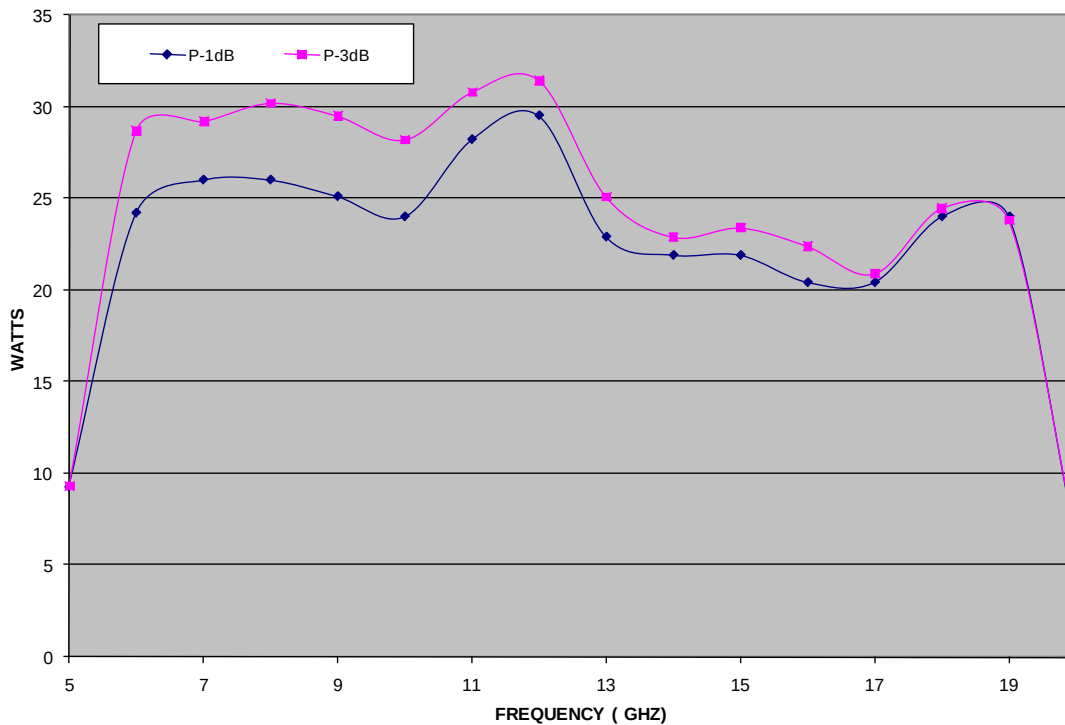
GAIN (at maximum setting) 44 dB minimum

HARMONIC DISTORTION Minus 20 dBc max

THIRD ORDER INTERCEPT POINT 49 dBm typical

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

XX/20S1G18 TYPICAL POWER OUTPUT WITH 6.0–18.0GHz BAND SELECTED



SPECIFICATIONS, MODEL xx/40S1G18, 6.0–18.0 GHz BAND

RATED POWER OUTPUT	40 watts minimum
POWER OUTPUT @ 3dB COMPRESSION	
Nominal	46 watts
Minimum	37 watts
POWER OUTPUT @ 1dB COMPRESSION	
Nominal	40 watts
Minimum	30 watts
FLATNESS	
@ 1 dB COMPRESSION	±2.0 dB typical, ±3.0 dB maximum
FREQUENCY RESPONSE	6.0–18.0 GHz instantaneously
GAIN (at maximum setting)	48 dB minimum
HARMONIC DISTORTION	Minus 20 dBc max at 40 watts
THIRD ORDER INTERCEPT POINT	52 dBm typical
PRIMARY POWER (selected automatically)	90-264 VAC
	50/60 Hz, single phase
	<1000 watts maximum

XX/40S1G18 TYPICAL POWER OUTPUT WITH 6.0–18.0GHz BAND SELECTED

