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

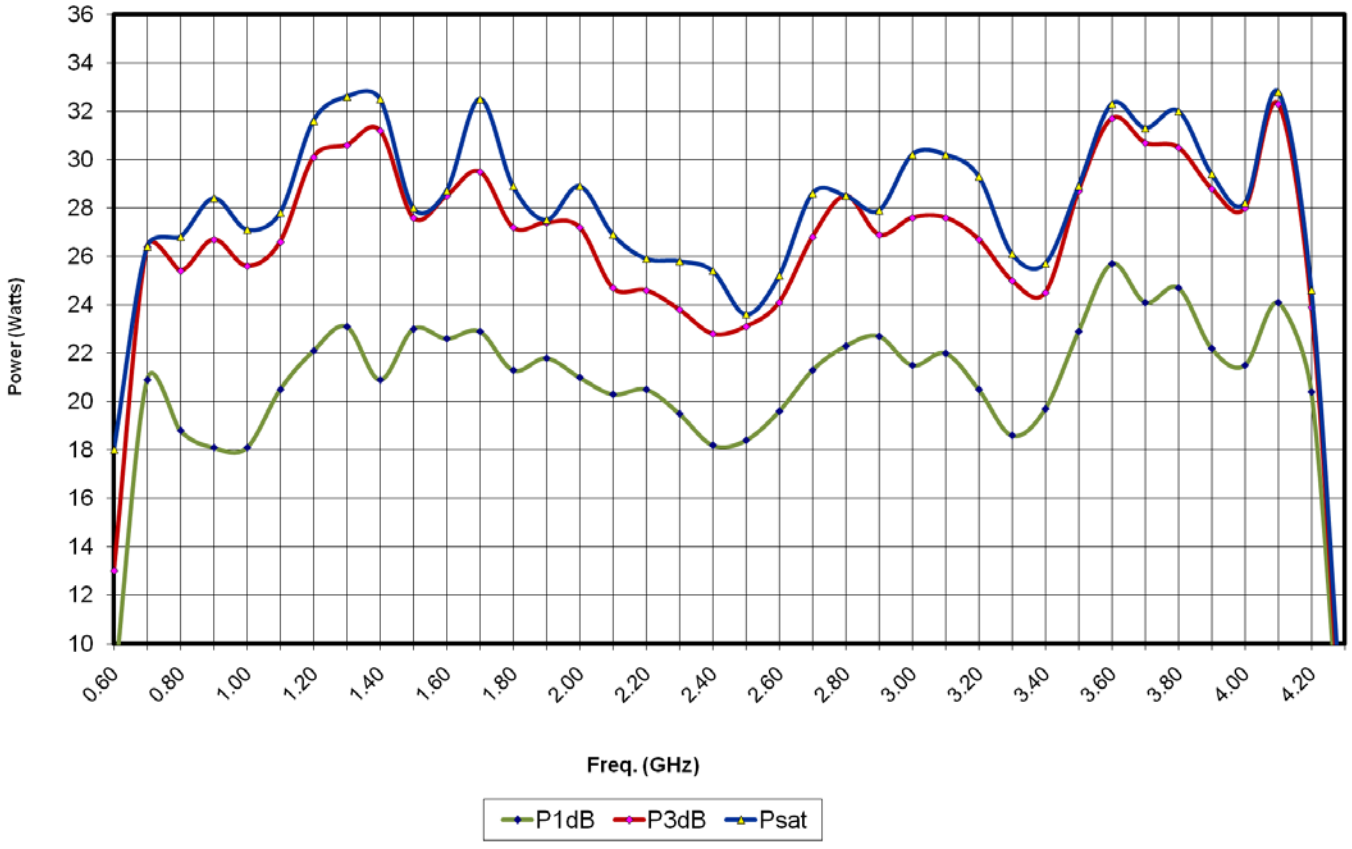
HARMONIC DISTORTION ..... Minus 20 dBc maximum at 20 watts

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 COMPRESSSION
- 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

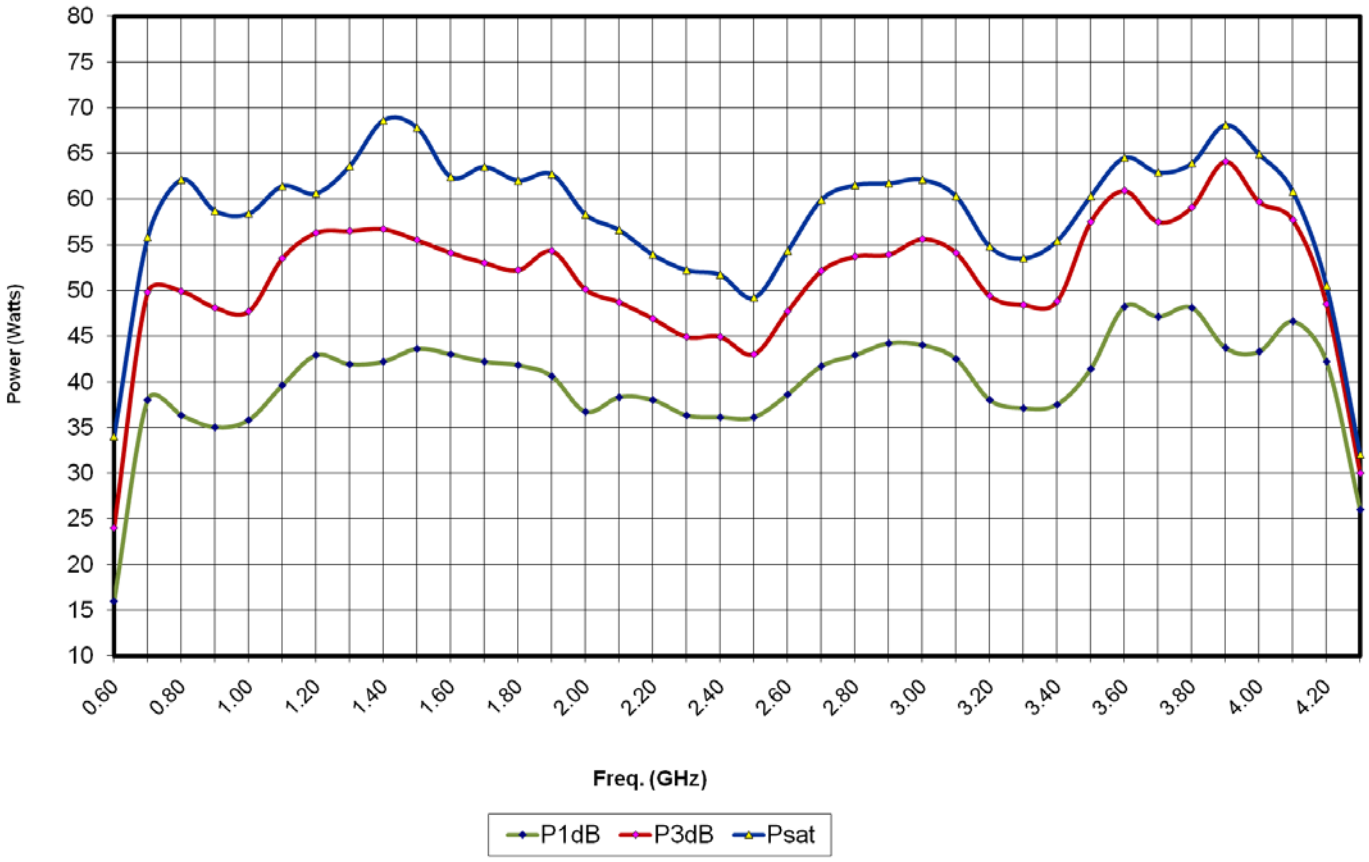
THIRD ORDER INTERCEPT ..... 55 dBm typical

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 COMPRESSSION
- 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

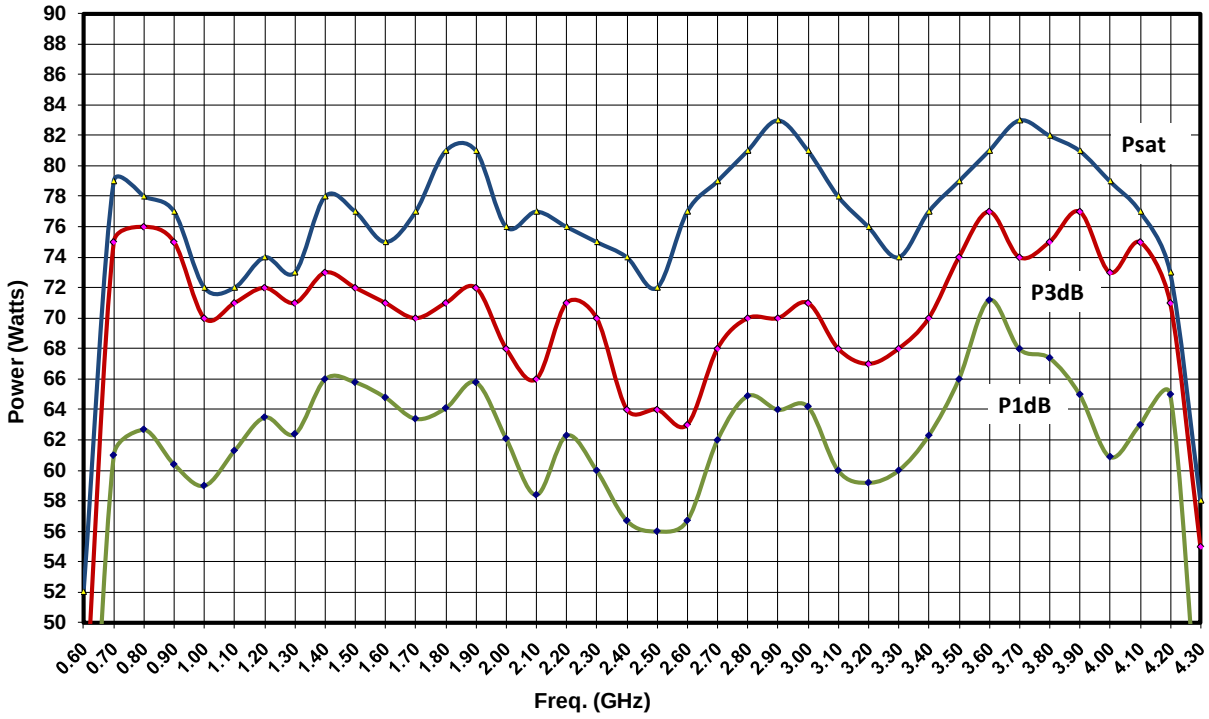
THIRD ORDER INTERCEPT ..... 57 dBm typical

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

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



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

RATED POWER OUTPUT ..... 80 watts minimum

POWER OUTPUT @ 3dB COMPRESSSION
- 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

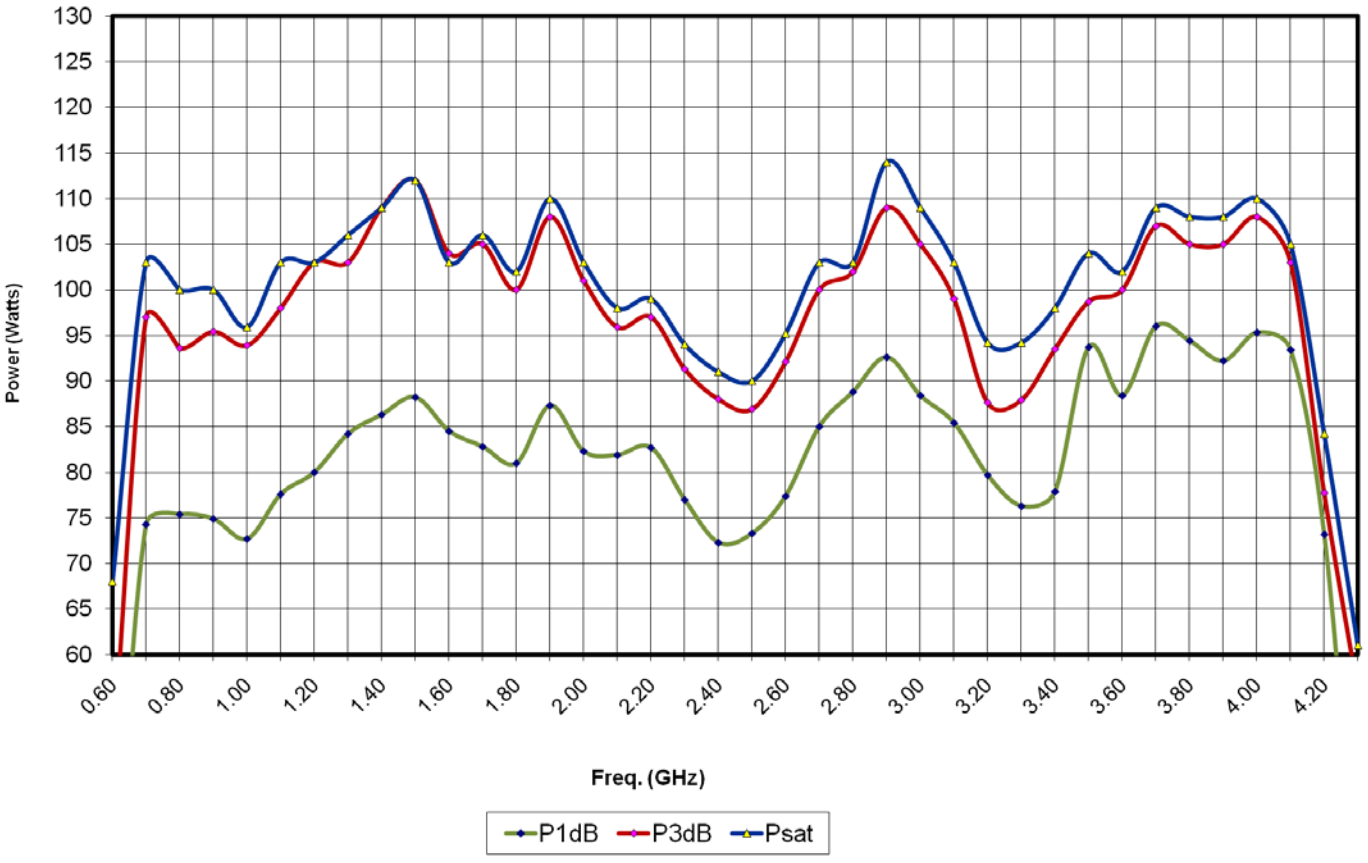
THIRD ORDER INTERCEPT ..... 58 dBm typical

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

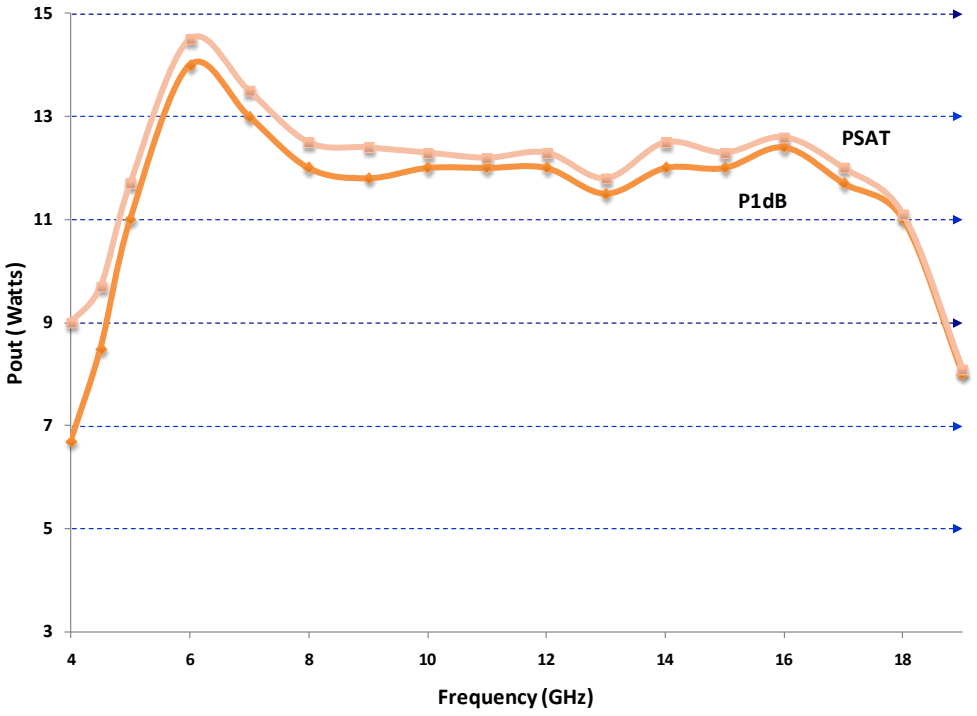
GAIN (at maximum setting) ..... 40 dB minimum

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

xx/10S1G18 TYPICAL POWER OUTPUT WITH 4.2–18.0GHz BAND SELECTED



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

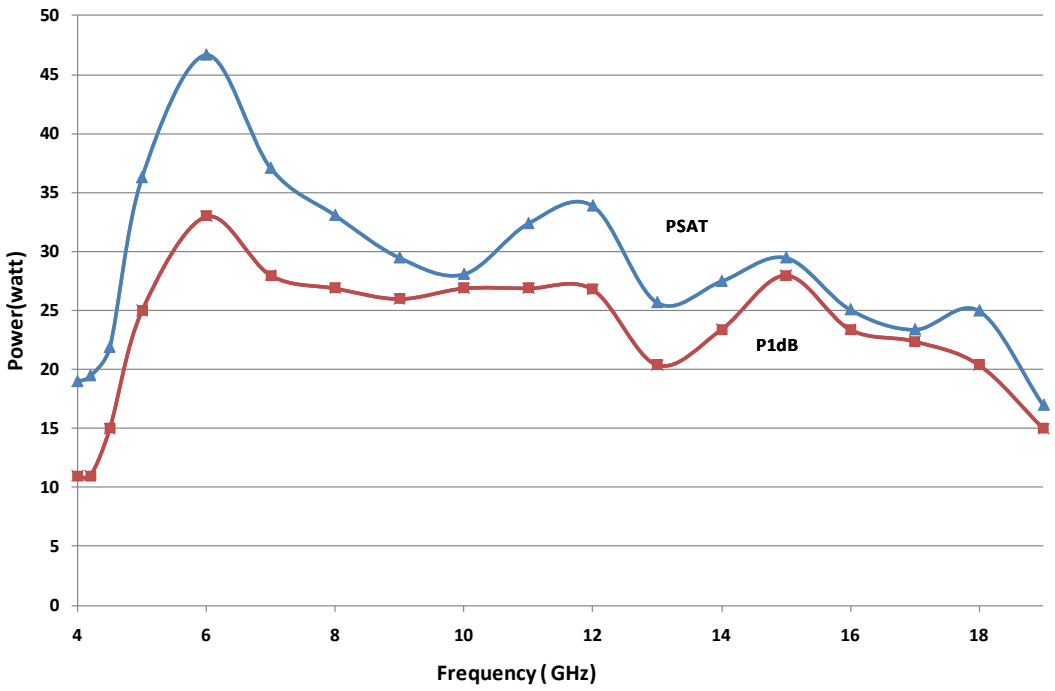
GAIN (at maximum setting) ..... 44 dB minimum

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

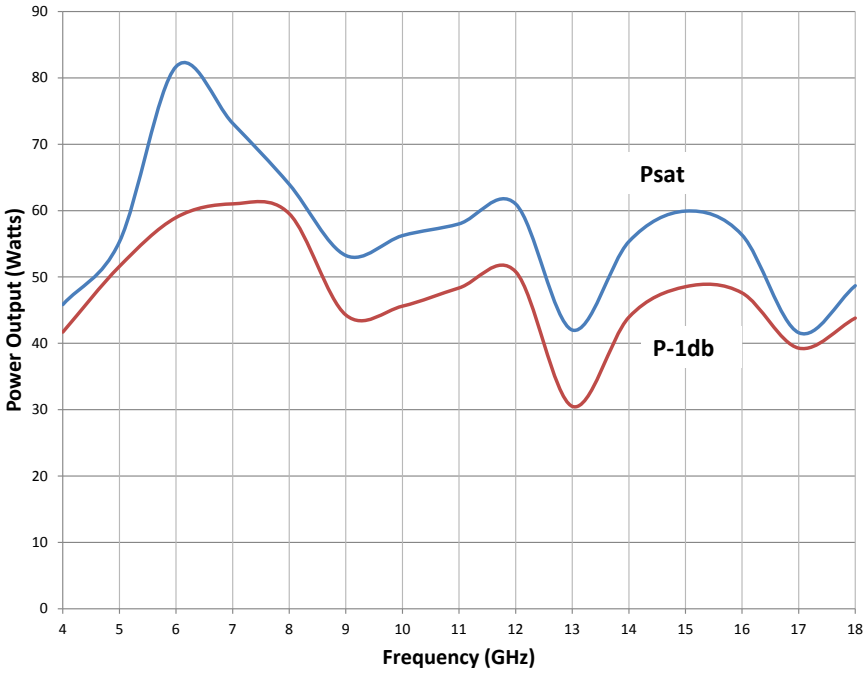
GAIN (at maximum setting) .....48 dB minimum

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

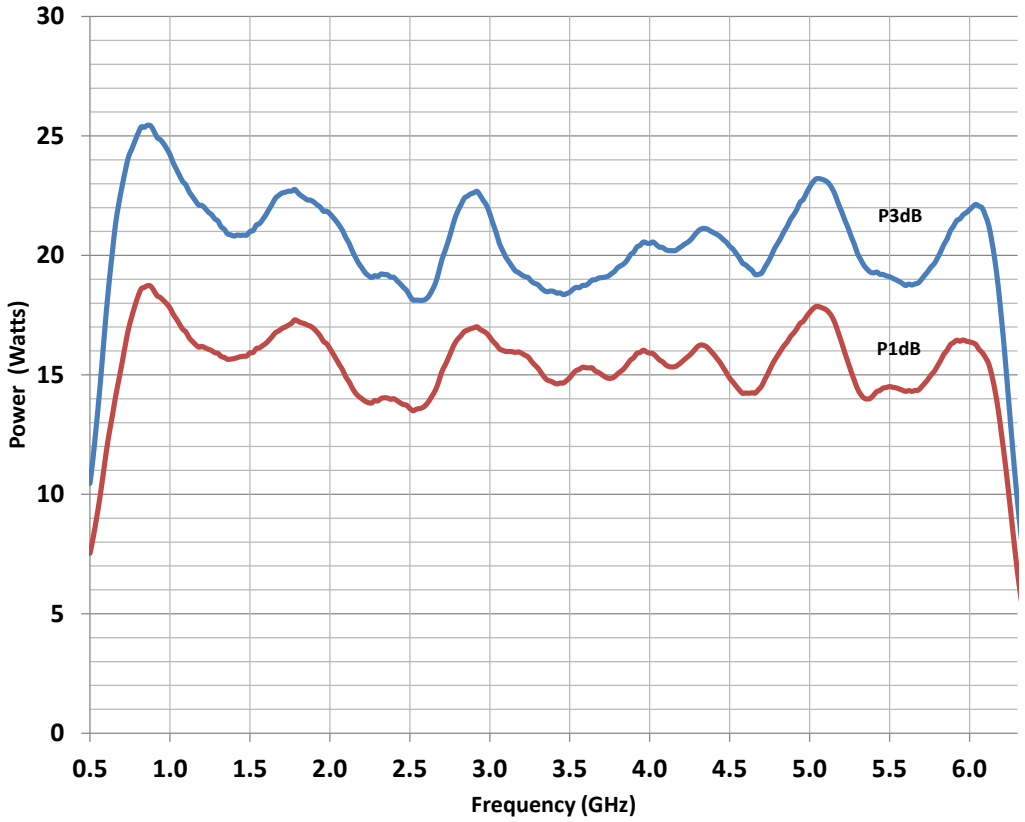
HARMONIC DISTORTION ..... Minus 20 dBc maximum at 15 watts (1.0-6.0 GHz)
Minus 15 dBc typical at 15 watts (0.7-1.0 GHz)

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 COMPRESSSION
- 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

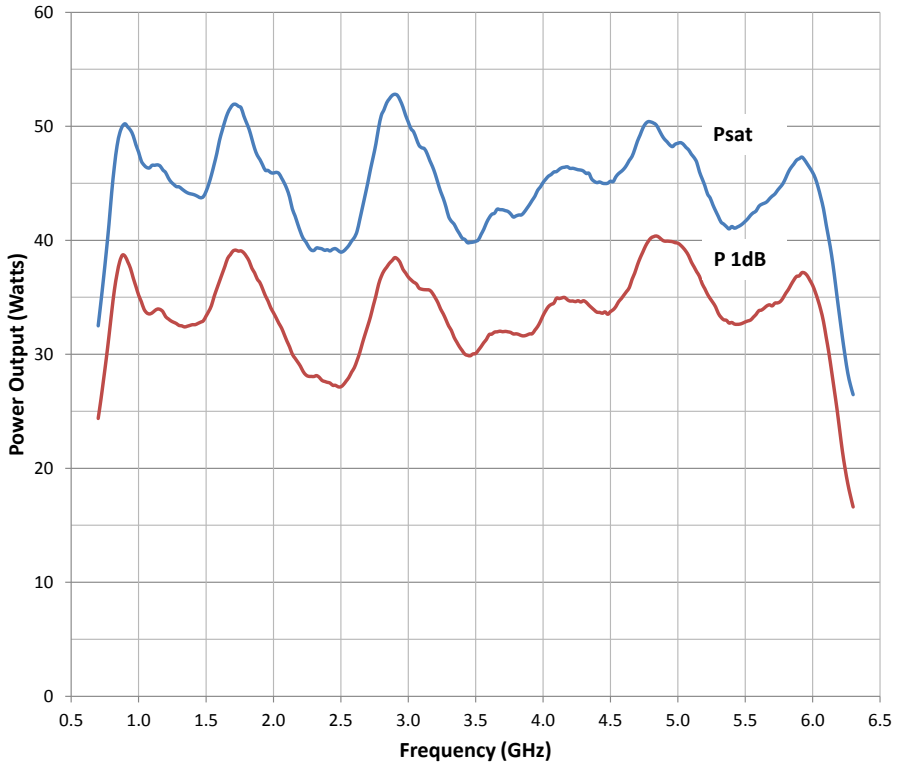
THIRD ORDER INTERCEPT ..... 51 dBm typical

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

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



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

RATED POWER OUTPUT ..... 50 watts minimum

POWER OUTPUT @ 3dB COMPRESSSION
- 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

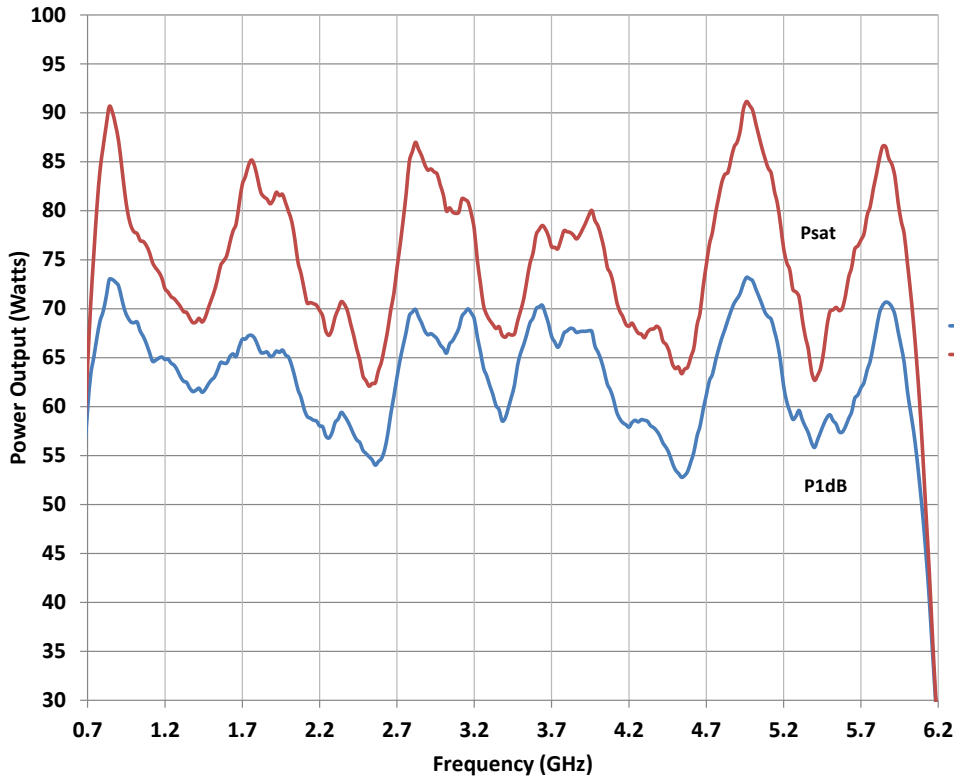
THIRD ORDER INTERCEPT ..... 56 dBm typical

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

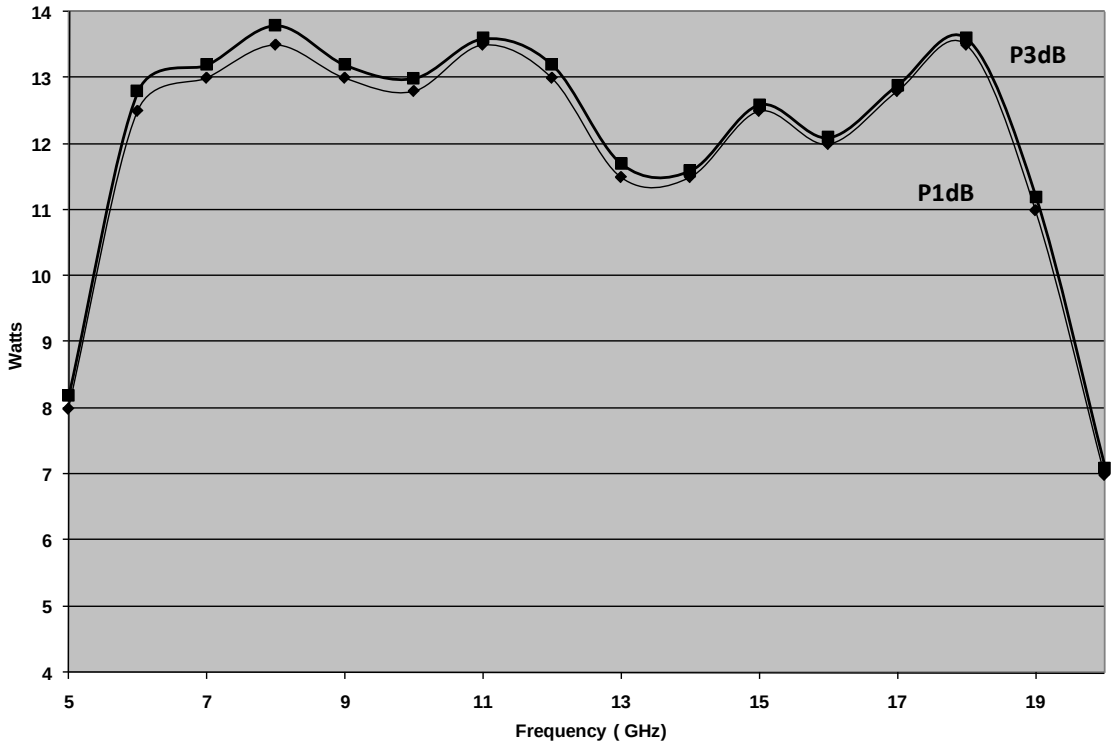
GAIN (at maximum setting) ..... 40 dB minimum

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

xx/10S1G18 TYPICAL POWER OUTPUT WITH 6.0–18.0GHz BAND SELECTED



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

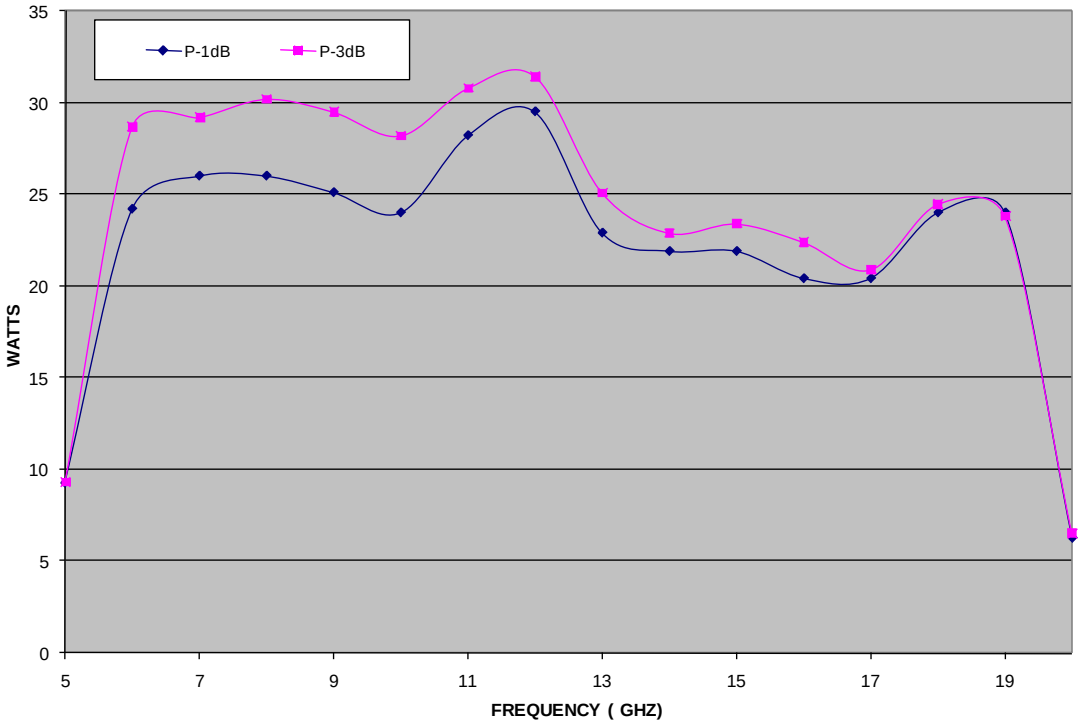
GAIN (at maximum setting) ..... 44 dB minimum

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