



**Model xx/xxS1G18**  
**20-80/10-20 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, 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**

|                              | <b>20 watts, 0.7-4.2GHz</b> | <b>40 watts, 0.7-4.2GHz</b> | <b>60 watts, 0.7-4.2GHz</b> | <b>80 watts, 0.7-4.2GHz</b> |
|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <b>10 watts, 4.0-18.0GHz</b> | 20/10S1G18                  | 40/10S1G18                  | 60/10S1G18                  | 80/10S1G18                  |
| <b>20 watts, 4.0-18.0GHz</b> | 20/20S1G18                  | 40/20S1G18                  | 60/20S1G18                  | 80/20S1G18                  |

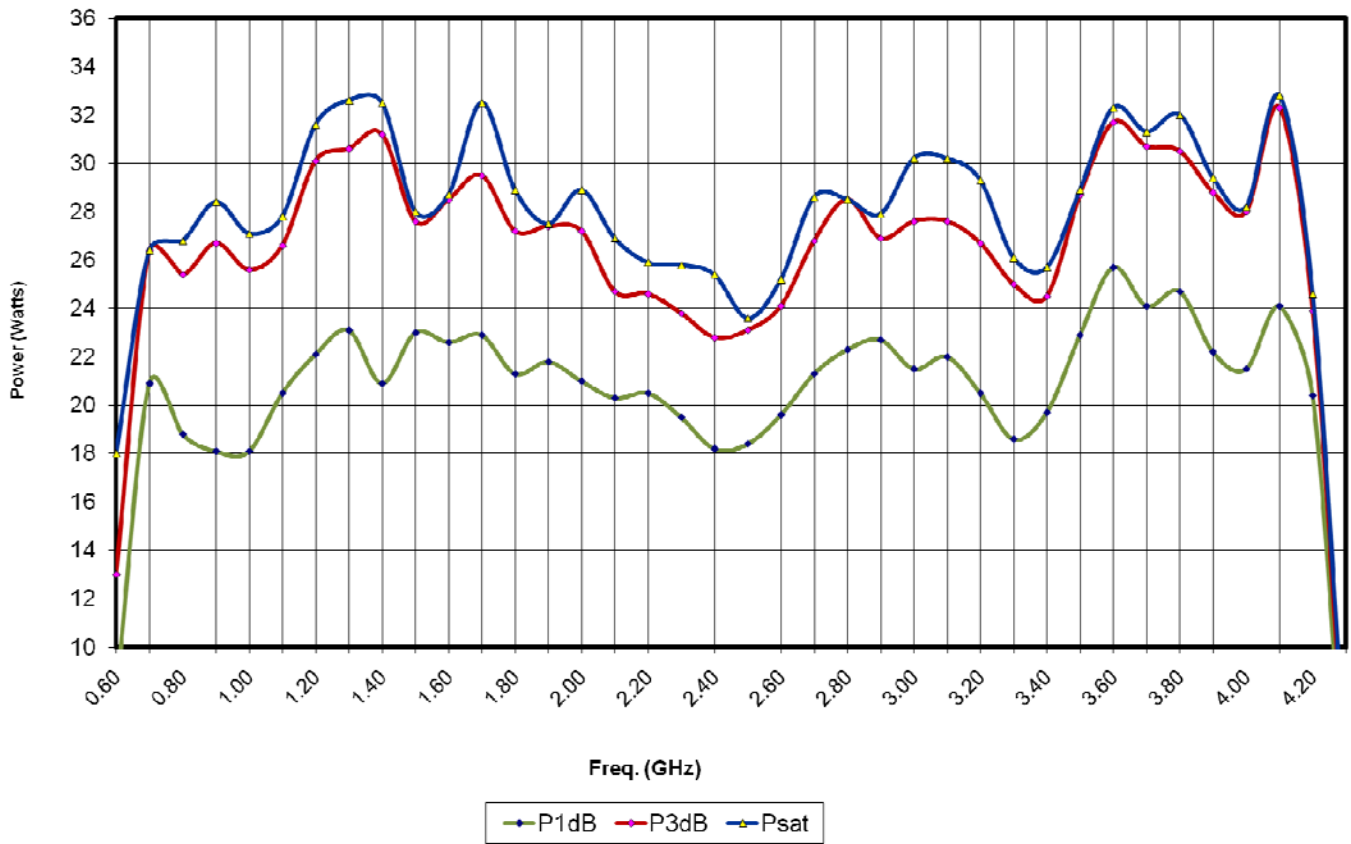
## SPECIFICATIONS COMMON TO ALL MODELS IN THE SERIES

|  |   |
|--|---|
| 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.<br>*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)<br>48.3 x 31.1 x 61 cm (19.0 x 12.25 x 24 in)   |

**SPECIFICATIONS, MODEL 20/xxS1G18, 0.7–4.2 GHz BAND**

|   |   |
|---|---|
| RATED POWER OUTPUT .....                    | 20 watts minimum  |
| <b>POWER OUTPUT @ 3dB COMPRESSION</b>       |   |
| Nominal .....                               | 25 watts  |
| Minimum .....                               | 20 watts  |
| <b>POWER OUTPUT @ 1dB COMPRESSION</b>       |   |
| Nominal .....                               | 22 watts  |
| Minimum .....                               | 18 watts  |
| FLATNESS.....                               | ±1.5 dB typical<br>±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<br>50/60 Hz, single phase<br>150 watts maximum |

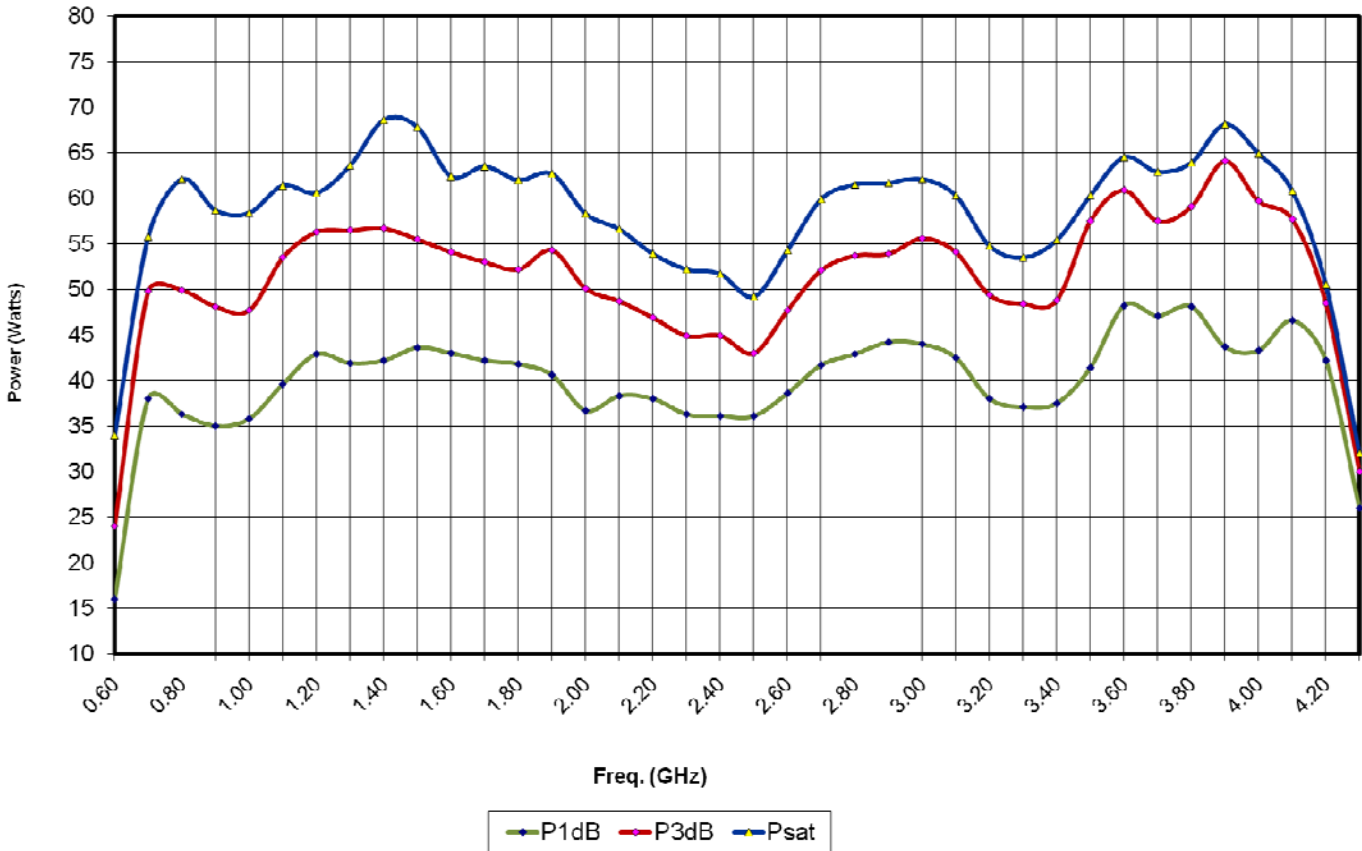
**20/xxS1G18 TYPICAL POWER OUTPUT WITH 0.7-4.2GHz BAND SELECTED**



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

|                                       |   |
|---------------------------------------|---|
| RATED POWER OUTPUT .....              | 40 watts minimum  |
| <b>POWER OUTPUT @ 3dB COMPRESSION</b> |   |
| Nominal .....                         | 50 watts  |
| Minimum .....                         | 40 watts  |
| <b>POWER OUTPUT @ 1dB COMPRESSION</b> |   |
| Nominal .....                         | 44 watts  |
| Minimum .....                         | 35 watts  |
| FLATNESS.....                         | ±1.5 dB typical<br>±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)<br>90-264 VAC<br>50/60 Hz, single phase<br>280 watts maximum |

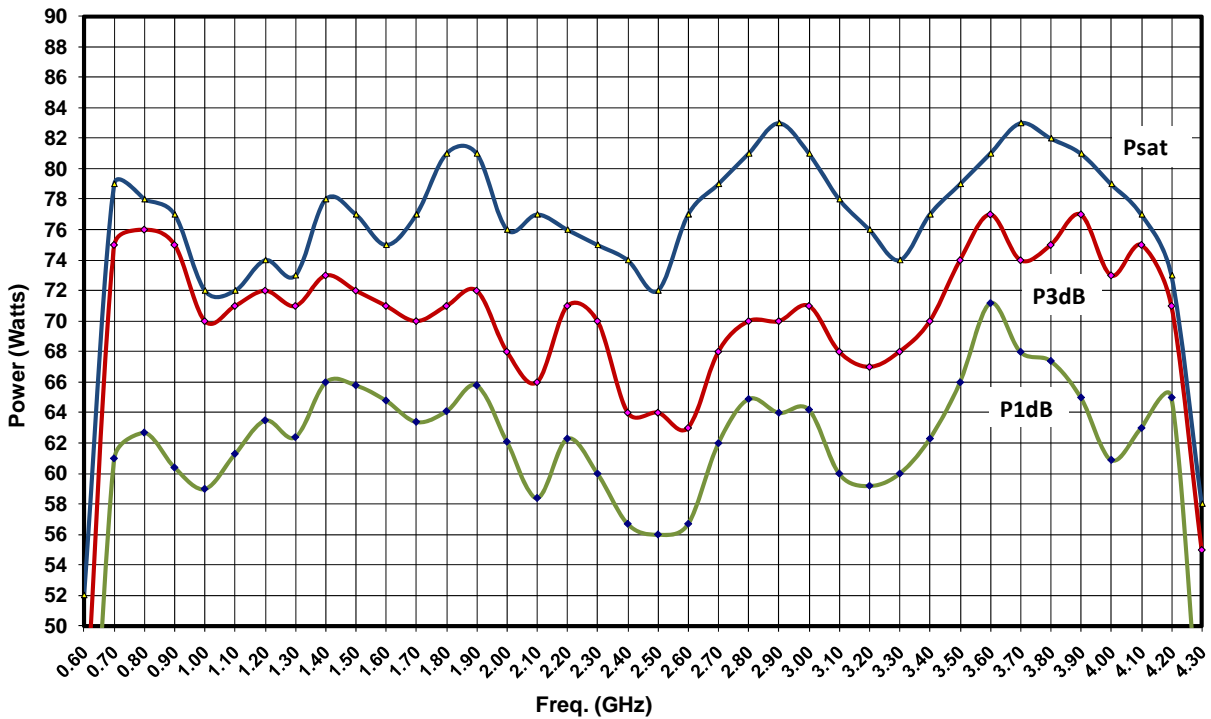
**40/xxS1G18 TYPICAL POWER OUTPUT WITH 0.7-4.2GHz BAND SELECTED**



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

|  |   |
|--|---|
| RATED POWER OUTPUT .....                     | 60 watts minimum  |
| <b>POWER OUTPUT @ 3dB COMPRESSION</b>        |   |
| Nominal .....                                | 70 watts  |
| Minimum .....                                | 60 watts  |
| <b>POWER OUTPUT @ 1dB COMPRESSION</b>        |   |
| Nominal .....                                | 65 watts  |
| Minimum .....                                | 50 watts  |
| FLATNESS.....                                | ±1.5 dB typical<br>±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<br>50/60 Hz, single phase<br>415 watts maximum |

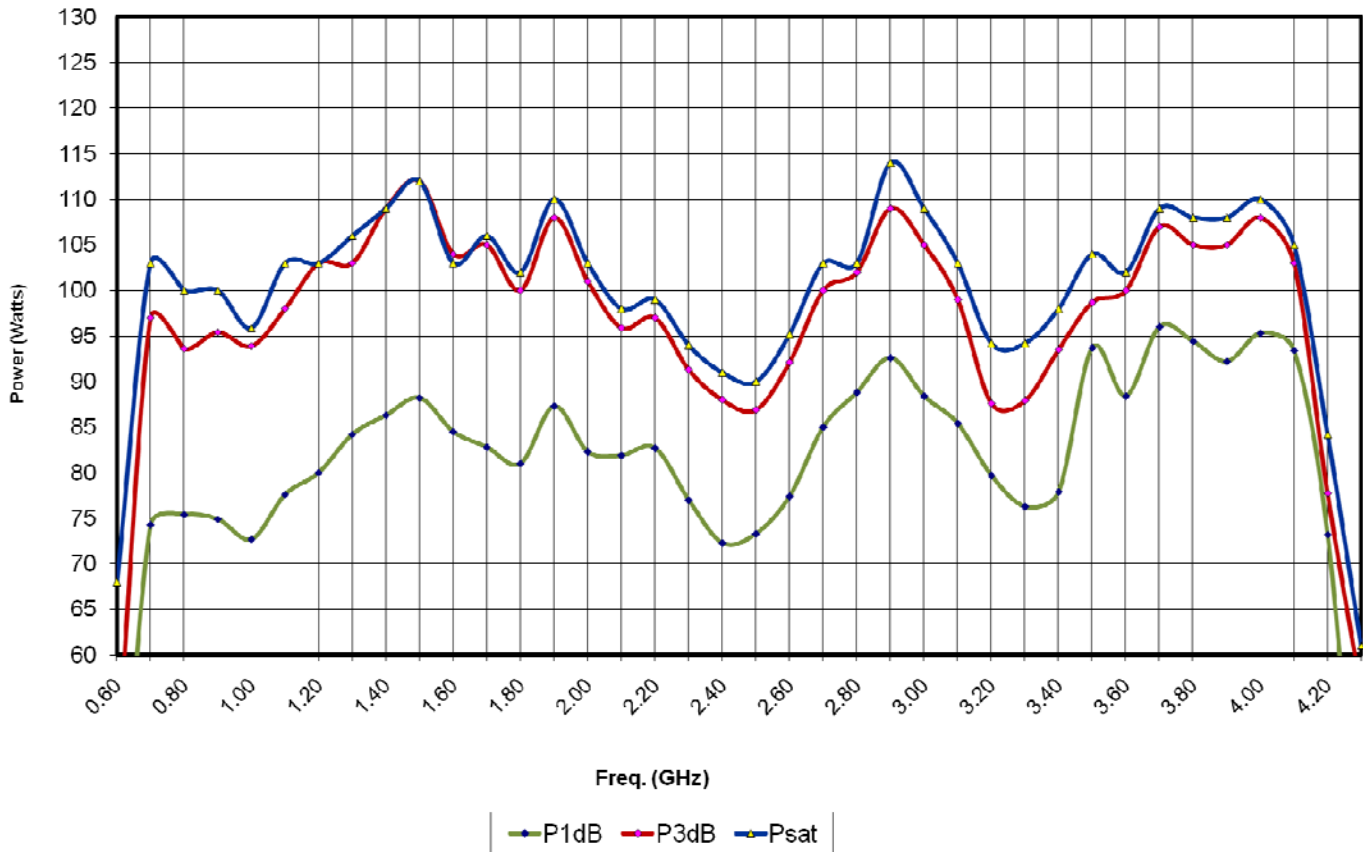
**60/xxS1G18 TYPICAL POWER OUTPUT WITH 0.7-4.2GHz BAND SELECTED**



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

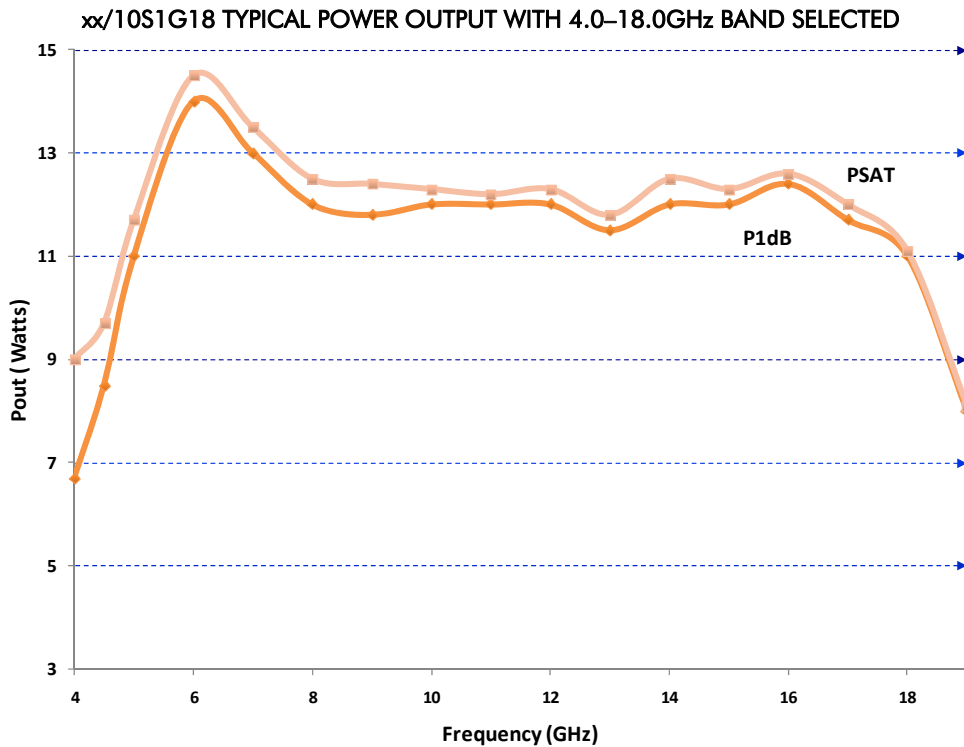
|  |   |
|--|---|
| RATED POWER OUTPUT .....                     | 80 watts minimum  |
| <b>POWER OUTPUT @ 3dB COMPRESSION</b>        |   |
| Nominal .....                                | 95 watts  |
| Minimum .....                                | 80 watts  |
| <b>POWER OUTPUT @ 1dB COMPRESSION</b>        |   |
| Nominal .....                                | 85 watts  |
| Minimum .....                                | 70 watts  |
| FLATNESS.....                                | ±1.5 dB typical<br>±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<br>50/60 Hz, single phase<br>450 watts maximum |

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



**SPECIFICATIONS, MODEL xx/10S1G18, 4.0–18.0 GHz BAND**

|   |   |
|---|---|
| RATED POWER OUTPUT .....                    | 10 watts minimum (5-18 GHz)<br>7 watts minimum (4-5 GHz)      |
| <b>POWER OUTPUT @ 3dB COMPRESSION</b>       |   |
| Nominal .....                               | 13 watts  |
| Minimum .....                               | 10 watts (5-18 GHz); 7 watts (4-5 GHz)                        |
| <b>POWER OUTPUT @ 1dB COMPRESSION</b>       |   |
| Nominal .....                               | 12 watts  |
| Minimum .....                               | 9 watts (5-18 GHz); 6 watts (4-5 GHz)                         |
| FLATNESS.....                               | ±3.0 dB typical<br>±4.0 dB maximum                            |
| FREQUENCY RESPONSE .....                    | 4.0–18.0 GHz instantaneously                                  |
| GAIN (at maximum setting) .....             | 40 dB minimum   |
| HARMONIC DISTORTION .....                   | Minus 20 dBc max at 10 watts (5-18 GHz) and 7 watts (4-5 GHz) |
| THIRD ORDER INTERCEPT POINT .....           | 47 dBm typical  |
| PRIMARY POWER (selected automatically)..... | 90-264 VAC<br>50/60 Hz, single phase<br>550 watts maximum     |



**SPECIFICATIONS, MODEL xx/20S1G18, 4.0–18.0 GHz BAND**

|   |   |
|---|---|
| RATED POWER OUTPUT .....                    | 20 watts minimum (5-18 GHz)<br>12 watts minimum (4-5 GHz)           |
| <b>POWER OUTPUT @ 3dB COMPRESSION</b>       |   |
| Nominal .....                               | 25 watts  |
| Minimum .....                               | 20 watts (5-18 GHz), 12 watts (4-5 GHz)                             |
| <b>POWER OUTPUT @ 1dB COMPRESSION</b>       |   |
| Nominal .....                               | 22 watts  |
| Minimum .....                               | 18 watts (5-18 GHz), 10 watts (4-5 GHz)                             |
| <b>FLATNESS</b>                             |   |
| @ 1 dB COMPRESSION .....                    | ±3.0 dB typical, ±4.0 dB maximum                                    |
| RFIN=-20 dBm.....                           | ±4.0 dB typical, ±5.0 dB maximum                                    |
| FREQUENCY RESPONSE .....                    | 4.0–18.0 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 (4-5 GHz) |
| THIRD ORDER INTERCEPT POINT .....           | 49 dBm typical  |
| PRIMARY POWER (selected automatically)..... | 90-264 VAC<br>50/60 Hz, single phase<br>600 watts maximum           |

**XX/20S1G18 TYPICAL POWER OUTPUT WITH 4.0–18.0GHz BAND SELECTED**

