

**Model 20ST1G18A,
M1, M2
20 Watts CW
0.8-18 GHz**

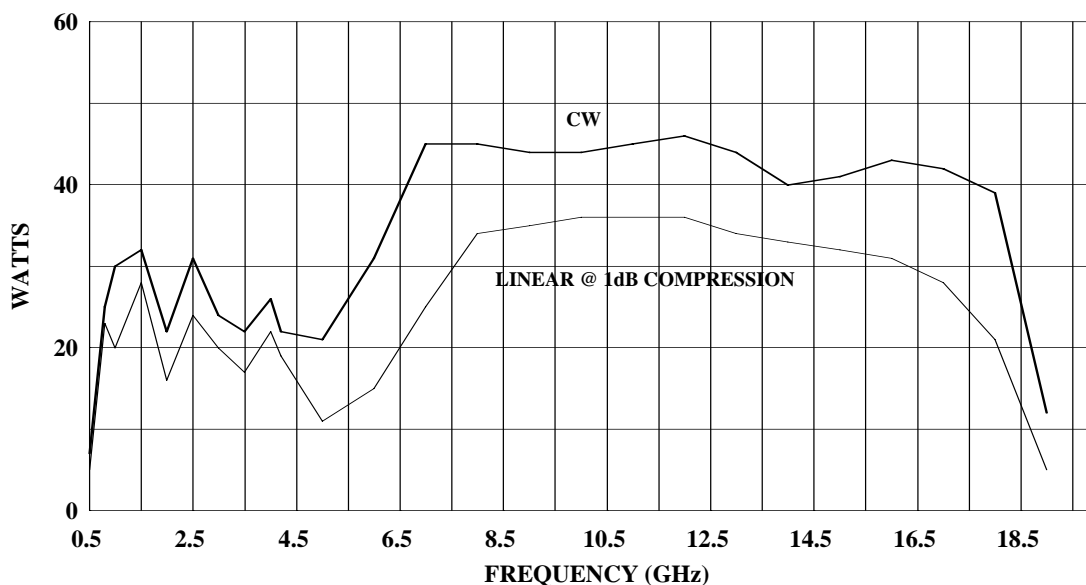
The Model 20ST1G18A is a self contained, forced air cooled, broadband hybrid solid state and traveling wave tube (TWT) microwave amplifier designed for applications where wide instantaneous bandwidth, high gain and moderate power output are required. A reliable amplifier system provides a conservative 20 watts minimum at the amplifier output connector. Stated power specifications are at the fundamental frequency.

The amplifier's front panel digital display shows forward and reflected output plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0dBm input, gain control, RF output sample port, VSWR protection for the TWT only, plus monitoring of TWT helix current, cathode voltage, collector voltage, heater current, heater voltage, baseplate temperature and cabinet temperature. The appropriate sub-band is user selected from either the front panel menu or the GPIB interface. Modular design of the power supply and RF components allow for easy access and repair. Use of switching mode power supplies result in significant weight reduction.

Housed in a stylish contemporary cabinet this unit is designed for benchtop use but can be removed from the cabinet for rack mounting. The Model 20ST1G18A provides readily available RF power for a variety of applications in Test and Measurement, (including EMC RF susceptibility testing), Industrial and University Research and Development, and Service applications.

See Model Configuration for package alternatives.

20ST1G18A TYPICAL POWER OUTPUT



SPECIFICATIONS
Model 20ST1G18A

POWER (fundamental), CW, @ OUTPUT CONNECTOR

Nominal 30 watts
 Minimum 20 watts
 Linear @ 1dB Compression 10 watts minimum

FLATNESS ± 3 dB maximum 0.8 – 4.2 GHz
 ± 9 dB maximum, 4.2 - 18 GHz

FREQUENCY RESPONSE 0.8 - 18 GHz in one of two selectable sub-bands
 0.8 – 4.2 GHz and 4.2 - 18 GHz

INPUT FOR RATED OUTPUT 1.0 milliwatt maximum

GAIN (at maximum setting) 43 dB minimum

GAIN ADJUSTMENT (continuous range) 10 dB minimum (0.8 – 4.2 GHz)
 35 dB minimum (4.2 – 18 GHz)

INPUT IMPEDANCE 50 ohms, VSWR 2.0:1 maximum

OUTPUT IMPEDANCE 50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCE 100% of rated power without foldback from 0.8 – 4.2 GHz. Output power foldback protection above 4.2 GHz at reflected power exceeding 20 watts. Will operate without damage or oscillation with any magnitude and phase of source and load impedance. May oscillate with unshielded open due to coupling to input. Should not be tested with connector off.

MODULATION CAPABILITY Will faithfully reproduce AM, FM, or pulse modulation appearing on the input signal. AM peak envelope power limited to specified power.

NOISE POWER DENSITY (from 4.2 – 18 GHz) Minus 80 dBm/Hz (maximum)
 Minus 90 dBm/Hz (typical)

HARMONIC DISTORTION (at 20 watts) 0.8–4.2 GHz, Minus 20 dBc maximum, Minus 30 dBc typical
 4.2-4.5 GHz; Minus 0 dBc maximum, Minus 1 dBc typical
 4.5-5 GHz; Minus 1 dBc maximum, Minus 2 dBc typical
 5-7 GHz; Minus 2.5 dBc maximum, Minus 4 dBc typical
 7-10 GHz; Minus 5 dBc maximum, Minus 9 dBc typical
 10-12 GHz; Minus 8 dBc maximum, Minus 12 dBc typical
 Above 12 GHz; Minus 20 dBc maximum, Minus 30 dBc typical

PRIMARY POWER 99-260 VAC
 50/60 Hz single phase
 700 VA maximum

CONNECTORS

RF input Type N precision female on rear panel
 RF output Type N precision female on rear panel
 RF output sample port Type N precision female on rear panel
 GPIB IEEE-488 female
 Interlock DB-15 female on rear panel

COOLING Forced air (self contained fans), air entry and exit in rear.

MODEL CONFIGURATION

- E Must select one enclosure type from the following [E1 or E2 or E2S]:
- E1 Removable outer enclosure, size 19.8 x 11.7 x 27 in., 50.3 x 29.7 x 68.6 cm. Add approximately 30 lbs, 14 kg to weight of E2.
- E2 Without outer enclosure size 19.0 x 10.5 x 27 in., 48.3 x 26.7 x 68.6 cm. Weight approximately 105 lbs, 48 kg.
- E2S Enclosure removed for rack mounting: slides and front handles installed, size same as E2. Add approximately 5 lbs, 2 kg to weight of E2.

Model	Feature
20ST1G18A	E1
20ST1G18AM1	E2
20ST1G18AM2	E2S