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**MODEL 20ST1G18**  
**M1, M2**  
**20 WATTS CW**  
**0.8 - 18 GHz**

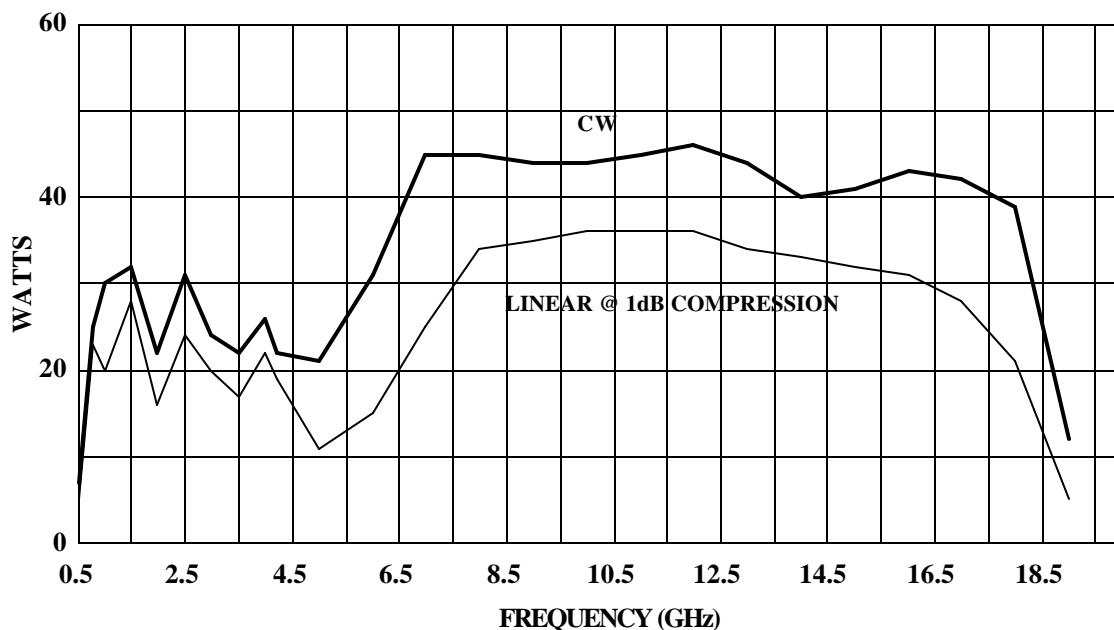
The Model 20ST1G18 is a self contained, forced air cooled, broadband hybrid solid state and traveling wave tube (TWT) microwave amplifier designed for applications where wide instantaneous bandwidth, high gain and moderate power output are required. A reliable amplifier system provides a conservative 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 20ST1G18 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.

**20ST1G18 TYPICAL POWER OUTPUT**



**SPECIFICATIONS**  
**Model 20ST1G18**

**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 20dBc maximum,  
 Minus 30dBc typical  
 4.2-4.5GHz; Minus 0dBc maximum,  
 Minus 1dBc typical  
 4.5-5GHz; Minus 1dBc maximum,  
 Minus 2dBc typical  
 5-7GHz; Minus 2.5dBc maximum,  
 Minus 4dBc typical  
 7- 10 GHz; Minus 5dBc maximum,  
 Minus 9dBc typical  
 10 - 12 GHz; Minus 8dBc maximum,  
 Minus 12dBc typical  
 Above 12 GHz; Minus 20dBc maximum,  
 Minus 30dBc 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 TNC female on rear panel  
 RF output sample port..... Type N precision female on rear panel  
 GPIB..... IEEE-488 (f)  
 Interlock..... DB-15 female on rear panel

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

**MODEL CONFIGURATION**

MODEL NUMBER	DESCRIPTION	WEIGHT	SIZE (W x H x D)
20ST1G18	With removable enclosure	61 kg (135 lb)	50.3 x 29.7 x 68.6 cm 19.8 x 11.7 x 27 in
20ST1G18M1	Shipped without an outer cabinet	48 kg (105 lb)	48.3 x 26.7 x 68.6 cm 19.0 x 10.5 x 27 in
20ST1G18M2	Enclosure removed for rack mounting, slides and front handles installed	50 kg (110 lb)	48.3 x 26.7 x 68.6 cm 19.0 x 10.5 x 27 in