

Model 15T4G18A
M1 through M6
15 Watts CW
4.2-18GHz

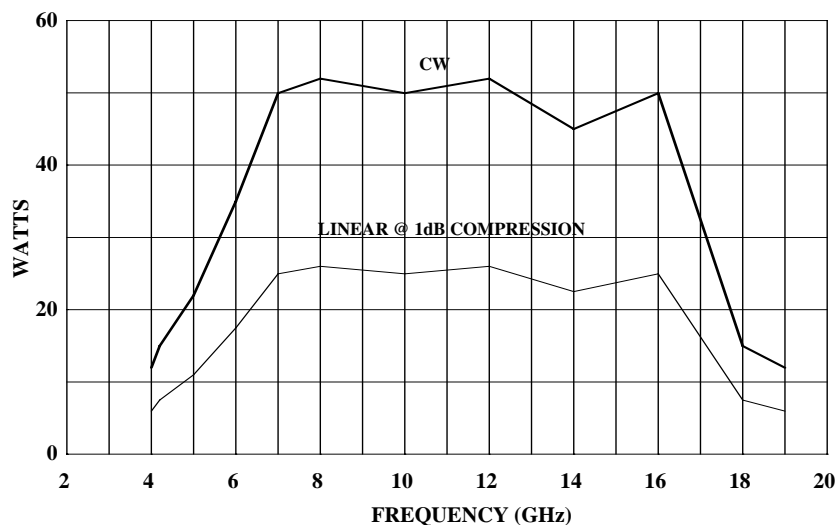
The Model 15T4G18A is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for applications where low harmonic content is required in sub-band ranges and where wide instantaneous bandwidth, high gain and moderate power output are required. A reliable micro TWT provides a conservative 15 watts minimum at the amplifier output connector, 10 watts in low harmonic modes. 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, VSWR protection, gain control, RF output sample port, plus monitoring of TWT helix current, cathode voltage, collector voltage, heater current, heater voltage, baseplate temperature and cabinet temperature. Modular design of the power supply and RF components allow for easy access and repair. Use of a switching mode power supply results 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 15T4G18A 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 alternative packaging, power specifications and other special features.

15T4G18A TYPICAL POWER OUTPUT



SPECIFICATIONS, MODEL 15T4G18A

POWER (fundamental), CW, @ OUTPUT CONNECTOR

Nominal	40 watts
Minimum	15 watts, 10 watts in low harmonic mode
Linear @ 1dB Compression	7 watts minimum

FLATNESS..... ± 9 dB maximum, 4.2 - 18 GHz
 ± 5 dB maximum, 8.0 - 18 GHz

FREQUENCY RESPONSE.....4.2-18 GHz instantaneously or one of three selectable sub-bands in low harmonic mode

INPUT FOR RATED OUTPUT.....1.0 milliwatt maximum

GAIN (at maximum setting).....41 dB minimum

GAIN ADJUSTMENT (continuous range).....35 dB minimum

INPUT IMPEDANCE.....50 ohms, VSWR 2.0:1 maximum

OUTPUT IMPEDANCE.....50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCE.....Output power foldback protection at reflected power exceeding 20 watts (10 watts in low harmonic mode). 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.....Minus 80 dBm/Hz (maximum)
Minus 90 dBm/Hz (typical)

HARMONIC DISTORTION (in user selectable sub-band at 10 watts)
Minus 20dBc maximum,
Minus 30dBc typical

HARMONIC DISTORTION (full band at 15 watts)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
600 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 (f)
Interlock	DB-15 female on rear panel

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

WEIGHT (approximate)32 kg, 70 lbs.

SIZE (W x H x D).....50.3 x 16.5 x 68.6 cm, 19.8 x 6.5 x 27 in.,

MODEL CONFIGURATIONS

E **Package Alternatives:** May select an alternative from the following [E1C or (E1C and E2S) and/or E3H]:

E1C **Cabinet:** Without outer enclosure, size 48.3 x 13.3 (3U) x 68.6 cm, 19.0 x 5.25 (3U) x 27 in. Subtract approximately 9 kg, 20 lbs from weight.

E2S **Slides:** slides installed, add approximately 2 kg, 5 lbs.

E3H **Handles:** Front handles installed.

S **Special Features:** May select a special feature (extra cost) from the following [S1R or S3P]:

S1R **Reflected** power port: Added Type N female connector on rear panel. Forward and reflected sample port calibration data supplied on disk in Excel format at 51 points, evenly spaced over specified frequency response.

S3P **Power:** Tube selected for increased minimum power in low harmonic mode at minus 20dBc maximum harmonic distortion:

20 watts, 4.2 – 6 GHz

17 watts, 6 – 8 GHz

13 watts, 8 – 10 GHz

Above 10 GHz no minimum power is specified

MODEL NUMBERS FOR 15T4G18A

Model Number	Features	
	E	S
15T4G18A	Base model	
M1	E1C	
M2	E1C & E2S & E3H	
M3	-	S3P
M4	E1C	
M5	E1C & E2S & E3H	
M6	E1C	S1R

Model number example: Model 15T4G18AM2 would have options E1C, E2S, E3H, no cabinet, slides and front handles installed.