

General Precautions for TWTA Operation

Most of these items are contained in the operation Manuals. However, some may not be obvious:

1. When an Amplifier has not been used for some time, more than 6 months, the unit may not produce full power. In this case, operate the Amplifier at about 1/2 of it's rated power for 12 hours and retest. If power is still not to specification, the unit will need service. In rare cases the gain and power will be very low, in this case put the amplifier in operate mode with very low RF input (-20dBm) allow some time (1 hour) for the unit to warm up thoroughly. If the performance picks up test as normal.
2. Helix Current: If the Amplifier trips OFF for Helix Current when RF is applied restart unit without RF applied; turn on RF at a low level (approx. 10 dB less than rated input) allowing helix current to stabilize, may take 10 minutes. Gradually increase input power allowing helix current to stabilize at each level. This is most important for high power (> 20 Watts) or high frequency (> 18 GHz) units when they have been in storage for a long time.
3. The longest life for a TWTA is when the unit is operated near its full RF power output or in storage. **CAUTION** when the unit is turned ON, it should be put to the OPERATE mode (OPERATE, RF ON, BEAM ON) within a short time. A few minutes is OK but long periods of STANDBY operation will dramatically shorten the life of the TWT.
4. TWT Amplifiers should not be operated outside there normal RF Band, if such operation requires the input drive be increased higher than normal. The Amplifier may produce good power. However, the high input drive (low gain) is likely to damage the Helix.
5. Some TWT's can be damaged by pulsing the Input RF. The RF pulse caused a momentary high Helix current and may over time damage the Tube. This problem has shown up when the unit is used for long term pulse operation.
6. Some RF Amplifiers have very high gain. It is recommended to start with RF input very low, -20dBm or less if you are not sure of the drive level required.

CAUTION

DO NOT ALLOW AMPLIFIERS TO REMAIN IN STANDBY MODE LONGER THAN 1/2 HOUR.

BE SURE THE RF INPUT AND OUTPUT PORTS ARE PROPERLY TERMINATED.

